DOCUMENT RESUME

ED 021 159 AC 002 085

By- Duncan, James A., Ed.; Flores, Thomas C., Ed.

SELECTED CASE STUDIES IN COMPARATIVE EXTENSION PROGRAMS.

Wisconsin Univ., Madison. Dept. of Agricultural and Extension Education.
Pub Date Oct 67
Note- 86p.
EDRS Price MF- $0.50 HC- $3.52
Descriptors- ADOPTION (IDEAS), AUDIOVISUAL AIDS, *CASE STUDIES (EDUCATION), COMMUNICATION (THOUGHT TRANSFER), COMMUNITY DEVELOPMENT, *COMPARATIVE EDUCATION, CULTURE CONFLICT, *DEVELOPING NATIONS, EXTENSION AGENTS, ILLITERACY, INTERAGENCY COOPERATION, LEADERSHIP TRAINING, RECRUITMENT, *RURAL EXTENSION, SYSTEMS APPROACH, UNIVERSITIES
Identifiers- Afghanistan, Argentina, Formosa, India, Malaysia, Philippines, Puerto Rico, Sudan

Case studies presented by graduate students from the United States and seven other nations dealt with topics in extension education. A system analysis approach to the problems in organizing extension services in developing nations was described, as well as physical and sociocultural problems (including illiteracy) which hinder audiovisual communication in rural areas. The Faculty of Agriculture at Kabul University was used to illustrate a discussion of the proper role of universities and colleges in Afghanistan. An evaluation was given of the relative influence of extension clubs and other extension approaches in Formosa and an analysis of the role of the National Institute for Agricultural Technology (Argentine) in Extension work, and the need for improved inservice training and cooperation with universities. The principles, process, and historical development of rural extension in the United States was outlined and implications suggested for program planning in Malaysia and Sudan. Final papers covered problems in recruiting and training village level extension workers in the Sudan, and Puerto Rican community development projects that illustrated the value of agency coordination. Also included are tables, diagrams, and references. (ly)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED021159

SELECTED CASE STUDIES IN

COMPARATIVE EXTENSION PROGRAMS

EDITED BY JAMES A. DUNCAN • THOMAS C. FLORES

EPARTMENT OF AGRICULTURAL AND EXTENSION EDUCATION, COLLEGE OF AGRICULTURE
UNIVERSITY OF WISCONSIN, MADISON OCTOBER 1967

HE004085

FOREWARD

A graduate seminar in Comparative Extension Programs was established at the University of Wisconsin in 1962. The purpose of this seminar is to provide a means through which students can make interpretations and applications of basic principles and concepts in the social sciences to problems of extension programs in developing countries. As the title implies, further value is derived from the seminar by comparing extension program developments in various countries.

This seminar is a joint responsibility of the Departments of Agricultural and Extension Education and Agricultural Journalism. During the spring semester, 1966-1967, Professor Thomas Flores, Chairman of Agricultural Communications, University of the Philippines, a visiting professor in the Department of Agricultural Journalism, assisted Professor James Duncan with this seminar. This publication is a result of the writings of the members of this seminar. Graduate Students representing the countries of Afghanistan, Argentina, Formosa, India, Malaysia, Libya, The Philippines, Sudan, and the United States wrote papers on various problems related to the development of extension programs. These papers have been edited and are presented here as an additional reference to the growing body of knowledge on comparative extension programs.

James A. Duncan
Associate Professor
Agricultural & Extension Education
University of Wisconsin
Madison, Wisconsin

Thomas Flores, Chairman
Dept. of Agricultural Information
and Communications
University of the Philippines
College Laguna, The Philippines

SYSTEMS ANALYSIS APPROACH TO THE PROBLEMS OF ORGANIZING EFFICIENT EXTENSION SERVICES IN DEVELOPING COUNTRIES

Raghbir Singh[1]

To understand better and deal more effectively with the problems of organizing efficient agricultural extension services in the developing countries, an analytical approach based on two widely used theories - the systems theory and the stages theory of development - is suggested.

I. Statement of the Problem

During the past decade and a half, considerable interest has been focused on the need to expand or establish new systems of agricultural extension in most of the developing countries of the world. Economists suggest that public investments to bring new technology to farmers through research and extension should receive a very high priority in the development plans of poor agricultural economics since such expenditures are expected to yield the greatest returns during the early critical phase of their modernization. At the same time, however, they raise interesting questions about the complimentarities between research and extension activities, the appropriate temporal sequence in which they should follow each other and the specific structural form in which the two activities should be established[2]. Another claim made in somewhat the same vein is that an extension service when properly organized is one of the least expensive mechanisms that can contribute effectively to the success of agricultural development efforts and the consequent improvement of rural living standards[3]. Here again, the important qualifying clause "if properly organized" begs the question: What is a properly organized Extension Service?"

That an adequate answer to this question, which also implies those referred to earlier, is of fundamental importance for the developing countries is amply demonstrated by the fact that in almost all of these countries the extension organization experience has led to many difficulties, even to many disillusionments. There are many instances of a greatly expanded extension program without the needed technology to extend through it or where the scope and coverage of the organization has been increased without simultaneously creating training facilities for the staff needed. Another too familiar case is one where the extension service is used as a community development organization. This use of extension, on account of a scarce resource base, has invited such adverse comments as being too diffused and too thinly spread. The handicaps imposed by conflicting operational objectives, a rigid hierarchical bureaucratic system of decision making, inter-service conflicts, unclear job specifications and too much planning of the top-down kind present other dimensions of the problem. These are the problems that are brought out whenever extension personnel in developing countries take a close look at their organizations. It will not be an exaggeration to say that the concept of extension has run into a serious image problem in some of these countries. In fact, in one of them it is referred to in popular conversations, not as a process of education, but as one of falsification or

of saying and doing things which one does not mean or which only serve the extension worker's own selfish interests.

To return to our original question, such situations are hardly reflective of "properly organized" agricultural extension services operating in developing countries. The reasons why they are not so and what can be done to improve them should become the focus of systematic analysis.

Fortunately, there now exists a vast body of sound theoretical knowledge within the domain of a number of organization sciences which, supplemented with the experiences gained in many countries of the world in practical agricultural extension work, can substantially meet the needs of such an analysis. As Boulding says, organizations have regularities and principles of action which are potentially as knowable and predictable as the motion of planets.[4] The implicit degree of precision will, of course, depend upon the analytical tool used. The potentiality of using these principles is explored with respect to the usefulness of one of the many available approaches for identifying the pertinent principles and tying them together as a meaningful theory of extension organization. Such a framework may be helpful in evaluating alternative choices and for making practical policy decisions with an element of increased certainty. In battling with acute problems of social and economic development, the last thing that the developing countries can afford to do is to fritter away their energies and precious human skills and material resources in experimenting with institutions and organizations which will not achieve the desired objectives.

II. A Theoretical Framework of Analysis

Before proceeding with an explanation of theoretical concepts to be used in the proposed analysis, let us restate the problem of extension organization vis-a-vis the developing countries. The problem may be generalized as one relating to:

1. Extension's objectives and scope.
2. Structural size, components and relationships of extension as an organization.
3. Operating procedures.
4. Levels of development of the service through time.

Two main streams of thought underlie the voluminous literature dealing with the problem with which we are concerned. The basic distinction lies in the manner in which the problem is approached.

1. Activity Oriented: The micro appropach concerns itself with examining the nature, magnitude, causal factors and possible remedies of each separate aspects of the problem separately. While it is possible to make

a greater in-depth analysis of each aspect this way, the approach fails to handle the complexities of inter-relationships between different activities.

2. Systems oriented: This approach is the macro nature of the problem and is stated in the context of a system of inter-related parts. The insights developed from use of systems theory are in terms of a set of general principles which explain the total behavior of phenomena under study.

Each approach is valid, relative to the kinds of questions which need to be answered. Since our concern in this paper is with the problem of establishing a model of an effective extension organization as a whole, the systems approach is preferred.

The underlying assumption follows the Gestalt principle, that parts take on characteristics because of their relationship within the whole.[5] Applied to an analysis of organizations, it implies that organizations are units or systems and their effectiveness may be determined by some characteristics of the whole rather than by the individual parts studied in isolation.

In our choice of an appropriate analytic model, three other guiding criteria have been kept in view.

First, organizations have a purpose and are concerned with achieving particular objectives. It is the purpose that provides an organization a basis, a stimulus and a guide to action. Organization analysis is therefore in one sense concerned with what is and what ought to be. In particular, it involves normative guides for achieving what ought to be. Any analytic framework must therefore provide for this element of purposiveness.

Second, organizations are comprised of many elements that are in complex inter-relationship. Consideration of any one of these elements inevitably involves consideration of the others. The framework for organization analysis must therefore provide ways of treating these complex interdependencies.

Third, the process of organizational development takes place over time. Further, it employs resources and has costs. The organization purpose changes as the societal setting which it serves changes from one state into the other. It follows that a framework for organization analysis must provide for the concept of development by stages.

As it becomes clearer from the following discussion, the systems model adequately meets the requirements of the three point criteria for the type of analysis we intend to generate. Let us now clarify what we mean by a "system" and other related concepts.

Definition of System Concepts

Webster's New Collegiate Dictionary defines a system as "an assemblage of objects united by some form of regular interaction or interdependence," "an organic or organized whole as a solar system or a telegraph system." Another meaning of system is "regular method or order as to have system in one's business." For our purpose we choose the first rather than the last of these definitions; that is, we want to convey the notion that a system is a set of components that are related in the accomplishment of some purpose.[6] In this sense, the expression comes very close to the definition of an organization, the difference, however, being that in the systems concept the manner in which the components or parts are related to one another becomes important.

Pattern of a System

In order to apply the system approach to organization analysis problems, we need to know in some further detail the pattern of a system. It can be described as having the following dimensions:

1. The Outputs, or the desired purposes or goals of the system. A related term used is the boundaries of the system which identifies what the system under study includes and what it does not.

2. The Inputs, or the elements which are fed into a system to produce the desired output. The inputs of a system may be the outputs of one of its own sub-systems or the outputs of some other system. This is an important point to note because it makes it necessary to consider the pattern of linkage or dependencies between systems or sub-systems.

3. The System States, are qualities or characteristics of the entities that are in relationship. They are key factors in determining the extent to which a system is able to accomplish its normative goals.

4. The Processes or functions which transform inputs into the desired outputs. For the type of systems with which we are concerned, we use Katz's identification scheme of these processes.[7]

   a. Decision making - choosing from alternatives what is to be done and how it is to be done.

   b. Specification - detailed programming of decisions, including designation of responsibilities and delegation of authority.

   c. Communication - establishing mutual understanding of goals, methods, problems and appropriate behavior between decision and action centers.

   d. Control - keeping system performance in conformity with decision standards within allowable limits of variation.

The last mentioned function is also related to a mechanism in technical literature on system designs called the feedback. Feedback is defined as the sole system function that compares output with a criterion.[8]

5. The Constraints on the system define what is feasible. These may be (a) technical constraints, (b) resource constraints, and/or (c) social or politcal constraints.

At this point we consider the stages theory of development as an important adjunct of the analytic framework. In simple terms, it means that what is ideal may not be practically feasible at a given time period because of some constraints, but it may be possible to achieve it to a reasonable degree in the subsequent stages of development of the system.

6. Stress or tension is a state or condition which reflects incompatibility or malfunctioning of any parts or components of the system.

Graphically a system may be visualized as such:

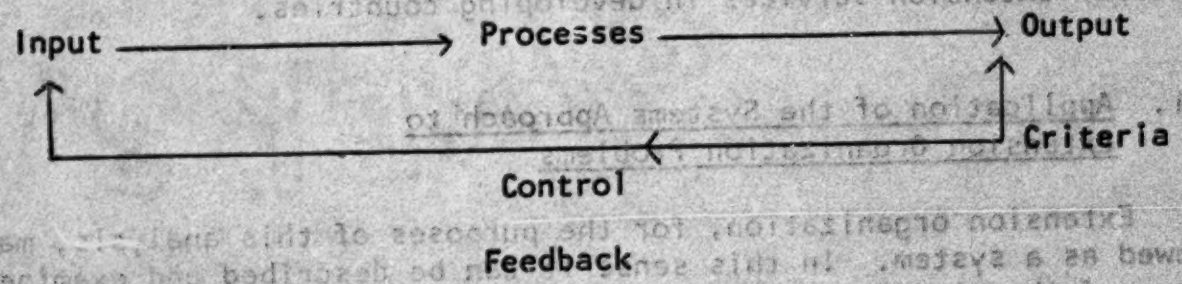


Fig. 1: A Single system model.

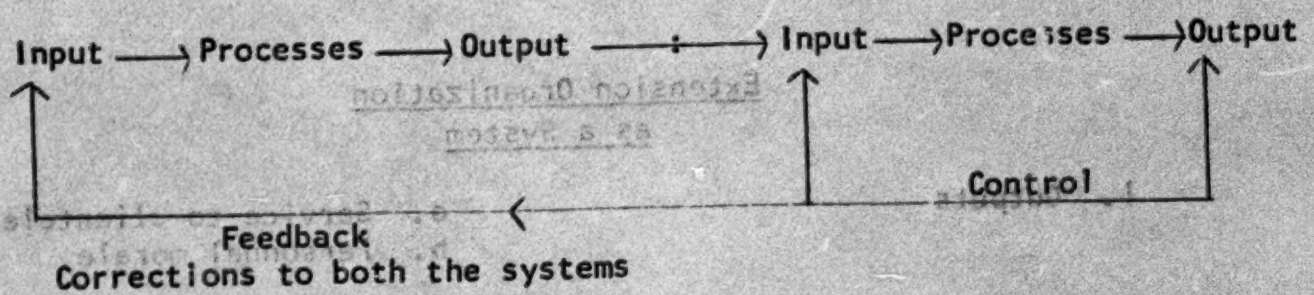


Fig. 2: An inter-system model.

Types of System Models

Two major sets of contrasting system models may be identified:

First Set:

(a) Survival model - A set of requirements which, if fulfilled, allows the system to function. Each relationship specified

is a prerequisite for the system to function. Remove any one of these relationships and the system ceases to operate.

(b) Effectiveness model - A pattern of relationships among the parts of the system which makes it most effective in accomplishing a given goal. It allows for the relative effectiveness of several alternatives.

Second Set:

(a) Independent systems - The extent of dependency on other systems is relatively less.

(b) Interdependent or Complementary systems - A set of systems in which the broad objectives are common and there is a greater functional interdependence. Each of these may thus be visualized as a part of the bigger Inter-System model.

The foregoing description gives an idea of what is involved in system analysis approach. In the next section we will explore how this pattern of thinking might be applied to problems of organizing agricultural extension services in developing countries.

III. Application of the Systems Approach to Extension Organization Problems

Extension organization, for the purposes of this analysis, may be viewed as a system. In this sense it can be described and examined in terms of the six dimensions of the systems pattern outlined in section II; namely, outputs, inputs, processes, system states, constraints and stress. In order to do it concisely, the description is presented in tabular form.

Extension Organization as a System

1. Outputs	a. Service to clientele b. Personnel morale
2. Inputs	a. Trained personnel b. Research information c. Money and other physical facilities
3. Processes	a. Administrative decision making b. Program planning c. Communication d. Evaluation (Feedback)

4.	System States (Characteristics or qualities of component) entities or system relationships	a. Intersystem Placement 1) Integrated with teaching and/or research or separate entity 2) University or ministry related
		b. Organization scope 1) Unified type or Divided type in terms of subject matter 2) Single purpose - educational or all purpose - educational supply and regulatory roles. 3) Multipurpose - Community development
		c. Administrative structure 1) Authoritarian or democratic 2) Centralized or decentralized
		d. Program Planning 1) Pre-determined 2) Self-determined 3) Planning together
		e. Objectives 1) Physical production target based 2) Behavioral change based
		f. Evaluation 1) Presence or lack of it.
5.	Constraints	a. Available support within the political, social and administrative systems
		b. Available funds and other resources of manpower
6.	Stress	Personnel morale and goal accomplishment pressures

The above table shows the number of alternatives in which the various dimensions or parts may combine or reflect themselves in a particular extension system. We thus have a great variety of extension systems the world over. Despite variations from country to country, among those operating it may be possible to pick up some common characteristics and approximate them into a typical extension system representing most of them. These are:

1. Government Ministry related.
2. Existing separately from a research or teaching institutions both in terms of physical location and functional pattern.

3. Operating under a centralized hierarchical administrative set-up.
4. All inclusive in scope - educational, supply service and regulatory functions combined in a single agency.
5. Under pressures of physical production targets and tending to implement pre-determined programs, and
6. Subject to great political control.

These system states or characteristics of the component entities, as identified in our analytic framework, basically determine what inputs go into the extension system, how these inputs are processed and what kind of product results. It can be safely hypothesized that certain inter-relations necessary for efficient operation of extension systems may be inadequate or completely lacking in developing countries. At the same time, a number of other relationships may be present of the type which may actually impede effective goal accomplishment. The more important of these are the following:

System's boundaries or scope: Basically, this relates to a definition of the concept of extension. The home-based definition of extension refers to it as a process of informal education among farm people[9]. In most European countries, it is labeled as advisory work and keeps close to the notion of education. In marked contrast to this, however, the concept of extension in most developing countries is that of an organization responsible for all ministry of agriculture activities at the field level, including regulation, providing supplies, collecting statistics, and handling the educational function. This wide ranging scope has serious implications in terms of efficient role performance. It has within it a combination of activities which are not very compatible with one another and lead to "role conflict" situations for the extension workers. Most extension workers tend to reflect what in one of the role conflict theories is called the expedient orientation[10] and follow those activities which will minimize the negative sanctions their superiors will bring to bear on them if they do not conform to expectations. In such situations, the educational role, because it is slow in showing tangible results, is assigned a low priority. Much of the effort goes into supply, subsidy distribution and regulatory functions. Obviously, such a system state affects all other inputs and processes such as administration, program development and evaluation procedure, and reduced the educational impact of extension. Further, it makes extension more vulnerable for use as a lever for political patronage. It is necessary, for an efficient operation of the extension system, that the boundaries be defined more closely around the educational role. In the early stages of development of agriculture in low income economies, when the level of available technology is simple, mixing educational, supply and service roles may not raise the kinds of difficulties identified earlier in this paper. As the progress is made, however, the educational role becomes more and more important and thus demands exclusive specialized handling. This is the direction in which the extension systems in developing countries should move.

Intersystem Placement

We have already noted in our analytic framework that a system's inputs may either be generated from its own subsystems or from the outputs of other systems. Two of the important inputs in extension are sound research information and trained personnel. The important questions that arise in this context are:

1. Where should these inputs be produced?
2. What should be the kind or quality of these inputs?
3. What can extension contribute in the production of these inputs?
4. Can and how should extension be related to where this production takes place?

In trying to arrive at a meaningful answer to these questions, we hold the basic proposition that extension as the utilizer of research information and trained personnel inputs has an important feedback role concerning their quality and production standards and must therefore be in an intimate relationship with their generation processes. The two systems which handle these processes are teaching and research institutions. The present situation in the developing countries sets extension outside the range of such a relationship and weakens the feedback. The principle of integrated teaching research and extension has a lot of merit in this context and forces us to view the extension system as a part of the bigger Inter-system model. It is an error to consider it as an independent system. A graphic illustration of the interdependency is presented in figures 3, 4 and 5.

Research, Teaching and Extension Integration

Fig. 3: Continuum Concept

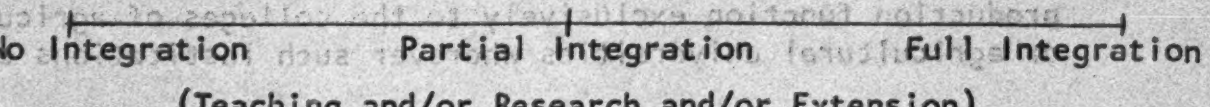


Fig. 4: Case I No Integration

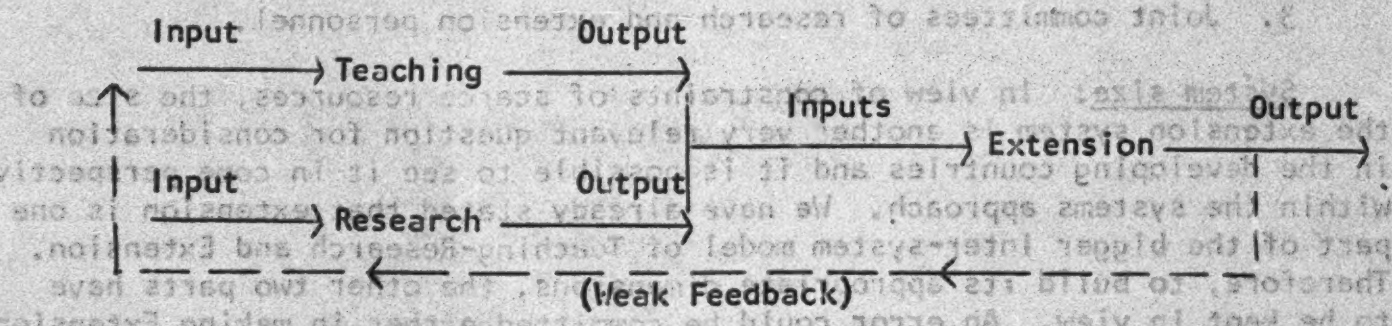
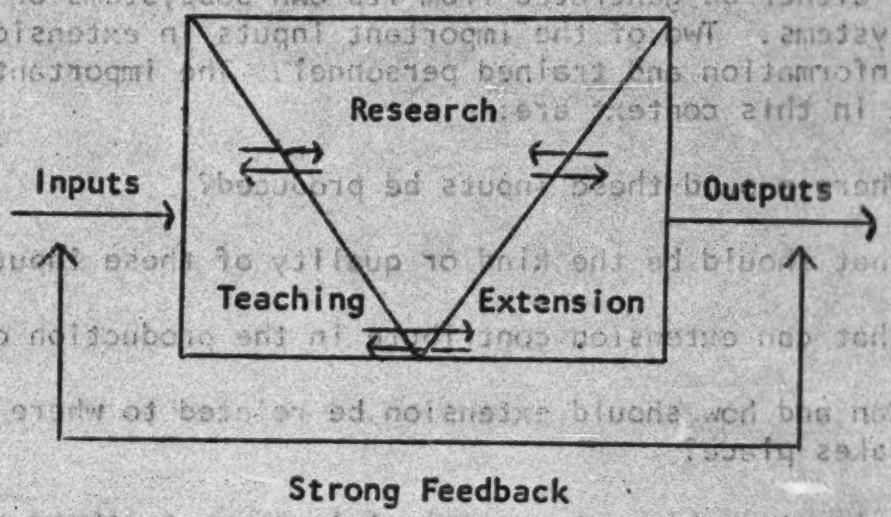


Fig. 5: Full Integration



The specific form in which inter-system linkage should be established must, however, be left to every developing country according to the unique situation in which it may find itself. There is also nothing sancrosant in the U. S. Land Grant Model that it should be transferred in its most pristine form in these countries. The most important thing is to grasp the essential principle and take such policy steps which will gradually bring the now independently existing teaching research and extension systems closer together. One step may be to integrate teaching and research. Another may be to create some formal and informal linkage between teaching and research. Another may be to create some formal and informal linkage between teaching and research on one side and extension on the other whereby the level of mutual interaction and inter-dependency may be increased. A number of specific ideas hold promise to move towards such a situation.

1. Entrusting in-service training and extension literature production function exclusively to the colleges of agriculture or agricultural universities wherever such institutions exist.

2. Creating subject matter specialist positions within the universities and making them available for a staff role in the extension system.

3. Joint committees of research and extension personnel.

System size: In view of constraints of scarce resources, the size of the extension system is another very relevant question for consideration in the developing countries and it is possible to see it in come perspective within the systems approach. We have already stated that extension is one part of the bigger inter-system model of Teaching-Research and Extension. Therefore, to build its appropriate dimensions, the other two parts have to be kept in view. An error could be committed either in making Extension

too big or too small in comparison with the related parts. The emphasis here is not on the physical size, but on how much of the technology and trained manpower is available from the other two parts. Extension's size and coverage should be kept in balance with research and teaching. Along with the other points touched in this analysis, the "size balance" is a rich field for very fruitful and problem solving research in extension for the developing countries.

A step by step process for the analysis of an extension system and for undertaking research to design system modifications is suggested.

A. Steps in the Analysis of an Extension System

1. Identify the system - purpose, outputs and boundaries.
2. Identify the inputs whose functional relationships can be arranged to produce the required outputs.
3. Identify the system processes.
4. Describe the existing system states - characteristics or qualities of system parts.
5. Specify system linkages and appraise their existing state.
6. Show the existence or lack of feedback - mechanisms to correct the malfunctioning of the system.

B. Steps in System Design

Analyse the Present System)
) - Investigation
Develop a Conceptual Model)

Test the Hypothesis)
) - Hypotheses
Propose a New System)

Pilot Installation of the New System)
) - Implementation
Full Installation of the New System)

SUMMARY

Properly organized agricultural extension services are claimed to yield a high payoff in bringing about agricultural development in low income economies. A study of the efforts made in this direction, however, shows that serious organizational difficulties are being encountered which, in most cases, require careful analysis. One of the ways this could be done is to use a systems model analytic framework to bring out the very crucial relationships which affect the efficiency of extension systems in developing countries.

The analysis made in this paper demonstrates that the framework has potential usefulness and suggests further refinements. Further study may give leads for meaningful comparative research on some key questions of extension organization and thus lay the basis for more adequate policies.

FOOTNOTES

1. Graduate Student, Department of Agricultural and Extension Education, University of Wisconsin, Madison.

2. For a more detailed understanding of the economic significance of these questions, see: Schultz, Theodore W., "The Economic Organization of Agriculture." (New York), McGraw Hill Book Co., Inc., 1953, p. 320.

   _____., "Economic Crisis in World Agriculture," (Ann Arbor) The Michigan University Press, 1965, Chapter III, pp. 41-68.

   _____., "Transforming Traditional Agriculture," (New Haven) Yale University Press, 1964, Chapters 10-12.

   Wharton, Cliffton R., Jr., "Education and Agricultural Growth: The Role of Education in Early Stage Agriculture," in C. Arnold Anderson and Mary Jean Bowman (Eds.), Education and Economic Development (Chicago), Aldine Pub. Co., 1966, pp. 202-228.

   Mellor, John W., "Production Problems and Issues in Agricultural Development," Journal of Farm Economics, Vol. 48, No. 5, Dec, 1966, pp. 1195-1202.

3. Farouky, S. T., "Agricultural Extension" in Agricultural Planning Studies No. 3, Food and Agriculture Organization of the United Nations, Rome, 1963, p. 218.

4. Boulding, Kenneth E., "The Organizational Revolution," 1953, pp. 66-67.

5. Watson, Goodwin, "Resistance to Change" in Goodwin Watson (Ed.) Concepts for Social Change, (Washington, D. C.), National Training Laboratories, National Education Association, 1967, p. 19.

6. For a more detailed explanation of the system concepts see literature referred in the Bibliography.

7. Katz, Saul M., "A Systems Approach to Development Administration," Papers in Comparative Public Administration Special Series No. 6, (Washington D. C.), American Society for Public Administration.

8. Optner, Stanford L., "Systems Analysis for Business and Industrial Problem Solving," (Englewood Cliffs, New Jersey), Prentice-Hall, Inc., 1965, p. 40.

9. The United States of America where the concept first developed.

10. Gross, Neal, Alexander W. McEachern and Ward S. Mason, "Role Conflict and its Resolution" in Readings in Social Psychology, Maccoby, Newcomb Hartley, 3rd ed.

BIBLIOGRAPHY

Ellis, David O. and Fred J. Ludwig, "Systems Philosophy," Prentice Hall, Inc., Englewood Cliffs, N. J., 1962.

Eckman, Donald Pled, "Systems Research and Design," John Wiley and Sons, New York, 1961.

Optner, Stanford L., "Systems Analysis for Business and Industrial Problem Solving," Prentice Hall, Inc., Englewood Cliffs, N.J., 1965.

Kaplan, Morton A. "System and Process in International Politics," John Wiley and Sons, New York, 1962.

Litterer, Joseph A., "The Analysis of Organizations," John Wiley and Sons, New York, 1965.

"The Challenges of Starting Extension Work in New Areas," Extension Publication No. 11, New York State College of Agriculture, Cornell University, Ithaca, New York, April, 1960.

"Establishing a Young Extension Service," Mimeo Release No. 1, Cornell University, Ithaca, New York, July, 1959.

"Conference on Extension Experiences Around the World," Washington, 1949. Report, Washington, 1951.

Leagans, J. Paul, "The Role of Extension Education in Rural Development," International Agricultural Development Program Bulletin #3, The New York State College of Agriculture, Cornell University, Ithaca, New York.

Chang, C. W., "Extension Education for Agricultural and Rural Development," Food and Agriculture Organization of the United Nations, Rome, 1963.

Indian Council of Agricultural Research, New Delhi, "Report of the Second Joint Indo-American Team on Agricultural Education - Research and Extension," I.C.A.R., New Delhi, 1960.

International Cooperation Administration, U.S.A., "Report on Near East South Asia Regional Extension Seminar," New Delhi, New Delhi, India, Directorate of Extension, Ministry of Food and Agriculture, Government of India, 1960.

Lynn, W., "Agricultural Extension and Advisory Work with Special Reference to the Colonies," His Majesty's Stationery Office, London, 1949.

New York State College of Agriculture, Cornell University, Ithaca, New York, "Varieties of Extension Education and Community Development," Comparative Extension Publication, No. 2, 1958.

New York State College of Agriculture, Cornell University, Ithaca, New York, "National Extension Service of Selected Countries in the America," Comparative Extension Publication, No. 8, 1958.

Hamilton, William B., (Ed.), "Transfer of Institutions," Duke University Press, Durham, 1964.

Davis, Lloyd H., Fifty Years of Extension in the U.S.A., FATIS, No. 3, 1964, Vol. 1.

Sanders, H. C., et al., "The Cooperative Extension Service," Prentice Hall, Inc., Englewood Cliffs, N.J., 1966.

AGRICULTURAL COLLEGES AND UNIVERSITIES IN THE DEVELOPMENT OF AGRICULTURE

Habibullah Dada

Countries all over the world are vigorously attempting to revolutionalize their economies. They want better diet, better health, education and a more comfortable living for their people.

No country can achieve this goal, however, unless there is the process of economic self-generation in motion. In most or almost all of the developing nations, agriculture is the vital factor in this process of economic self-generation, but it is impossible to develop agriculture to fulfill its role without leadership. Leadership in agriculture in turn depends upon high quality educational resources. The significant role that agricultural colleges or universities can play in the development of leaders cannot be overlooked. Thus, close relationships must be established and relationships already established perpetuated between agencies and organizations involved in agricultural work and the agricultural universities if agriculture is to develop.

In our discussion of the role of agricultural universities in the development of agriculture, we will be mainly talking about the functions and role of these universities through an educational system generally called agricultural extension.

Relationships between the agricultural universities and the extension service vary a great deal among different countries. For instance, the U. S. Agricultural Extension is a part of the land grant universities. In Afghanistan, on the other hand, the Faculty of Agriculture has no legal or official relationship with the department of agriculture extension. There, the university is a part of the Ministry of Education, while extension is under the Ministry of Agriculture.

1. What is the role of agricultural universities in the development of agriculture for the U. S. and some other developed countries?

2. What should be the role of agricultural universities, with special emphasis on Afghanistan, in the development of agriculture in the developing countries?

We are talking mainly about what the agricultural college or university can do for extension in accomplishing its aim, that of the development of agriculture and in the long run improving the living conditions of the rural people.

The three main functions of an agricultural university and their significance to agricultural extension services will be emphasized. There is a great need for cooperation between the university and the extension service in order to successfully fulfill their objectives. The university

needs to know the problems and concerns of the extension service and those of the people in order to provide its educational services based on those needs and concerns.

The three functions of the university are:

1. Teaching 2. Research #. Extension

Hannah quotes these functions as follows:

"The purpose of an effective institution of higher learning in agriculture is to educate for service, experiment to solve real problems, conduct extension work to learn about problems and congregate solutions, and engage in public service so the leadership in agriculture will learn to respect and look to it for guidance and help."

TEACHING

Traditionally, the university has been considered as the center for knowledge.

"A place where high intellectual scholars congregate to perpetuate their discipline. It was a place restricted only to a small group of elites. Where knowledge was taught for the sake of knowledge, without any application to real life problems and daily practices."

This role is still evident to varying degrees in the developing countries (for sure in Afghanistan).

The function of today's university should be to continually seek new knowledge and test scientific theories through research and to serve as an educational system for the people in the solution of problems in agriculture, industry and other phases of life.

There is a strong need for a close working relationship between the university and field programs in extension. This permits professors to become more aware of problems and orient their teaching more and more toward the actual problems of agriculture and community development. It will also help men and women graduates to attain a high degree of competence and more commitment to their job, and above all graduates who are already aware of problems of the agricultural profession.

To go a step further and look into the actual course work which will be of great value to the future success of agricultural developers, it is suggested by numerous authors, and I fully agree, that the university should provide content courses in extension, sociology, psychology, communication, and journalism. Students should also have basic foundations in the sciences of technology of agriculture, marketing, etc.

More specifically, the agricultural universities should provide potential extensionists and agricultural developers with the following:

1. Basic knowledge of social and physical sciences of significance to life in rural communities.

2. Familiarity with reliable sources of information.

3. Understanding the background, philosophy, objectives, policies, and organization of the extension system.

4. Skill in applying principles of psychology and education to extension teaching, supervision, and administration.

5. Ability to organize rural people and stimulate leadership among them.

6. Understanding of the process by which rural people and extension workers in cooperation can analyze local problems, arrive at potentially sound solutions, and develop a county extension program.

7. Knowledge of the problems and procedures of adults and out of school youth education.

8. Skill in organizing, interpreting and presenting basic economic, social, technical, scientific data, and their implications in rural life.

9. Understanding of the techniques and processes of evaluating the effectiveness of extension programs.

Apprentice Training. Classroom work alone is not adequate preparation for the informal teaching situation faced by extension workers. Therefore, a period of about three months or more should be devoted to field work where the prospective professional works under an experienced extension agent. This is usually suggested during the senior year.

The extension supervisor should assist the agent to counsel the student and orient him to the appropriate work. He then assists the agent in evaluating the student from time to time and gives suggestions.

To just do the above and give diplomas to its students does not end the obligations of a university. The graduate of the university should look to the university after employment as a place for knowledge and should refer to it and must be welcomed by the university any time he needs assistance. The university should stretch its arms to reach rural people through various ways and means. This will be discussed under Extension.

RESEARCH

Research or the search for new knowledge should be an integral part of teaching. We experiment to test the hypotheses that come out of our problems, needs and concerns. The proven hypotheses become our recommended principles. Principles to be applied to different situations need further experimentation for their applications in specific situations. Once these principles are proven to be adopted and are adopted, we have contributed to the development of a better life. There is always a possibility of new problems arising and new concerns from our adopted practices, so we have to keep up with them and try to find solutions through continuous research.

The essence of continuous research to the development of agriculture is further described by Charles Hitch. He says:

> "Research is translated into hardier grains, healthier animals, and more scientifically oriented farmers. In turn, the farmers, problems and requirement promote new research. As the number of farmers and farms decreases, the pressure to apply advanced technology mounts. The results are almost magical; more and better food produced by fewer farmers using less labor and less land."

Once one starts instruction in agriculture, the need for research becomes so obvious. It becomes a must. He cannot go very far without the backing from research. Professor Robert tells of his experiences in regard to this fact as a teacher of agriculture in the early days of Iowa State College of Agriculture:

> "I began to tell the students what I knew about farming. It did not take me long to run short of material and then I began to consult the library. I might as well have looked for cranberries on the Rocky Mountains as far as material for teaching agriculture in that library."

In order that the university resources and research findings be used at best, there is a need for a close cooperation between the university and the extension service. Personnel who are directly involved in the development of rural people interpret and explain research findings to rural people, and try to influence these people to adopt the new findings into their daily practices. More awareness of the university about local needs, problems, and concerns will help the university to focus its attention on the resolution of felt needs and concerns of extension and those of the local people.

There are two types of research in agriculture: fundamental and applied. The agricultural universities must concentrate on the second type, although the first should not be neglected. Research for our purpose as agricultural extensionists is again divided: research in agriculture and research in extension.

The faculty of Agriculture, Kabul University has recently become involved in agricultural research. Examples of our present research studies are: variety in fertility trials, effect of various cultural practices on crop production, feeds and feeding, seed germination, etc. No research work has been yet done on the extension methodology at the faculty or at the Ministry of Agriculture.

EXTENSION

Extending research findings to rural people is the last in order, but is certainly the first important function of an agricultural university in the development of agriculture. The relationships between the extension service and the university varies in different countries. The kind of existing relationship is of great significance to the discrimination and extending of research data and numerous other services the university can provide for an extension service. Extension, as an integral part of the land grant college system is the more important factor contributing to the success of agricultural extension of the United States. The same system, however, has been tried by some countries and it doesn't seem to be successful.

There are things to be learned here, but they have to be highly modified in order to become applicable to many countries and situations. And there are many factors responsible for this which I have mentioned earlier.

The scope of activities of agricultural extension is getting wider all the time. It is getting involved in many adult education activities for youth, men and women. The role of the university is thus becoming more significant at the same time.

All that the university can do for extension in its efforts for the development of agriculture and the community as a whole cannot be covered in the time we have today. Some of the most important functions of a university are:

1. The university helps in providing specialists in the various fields of agriculture and extension itself. These specialists are connecting links between local extension service, the college of agriculture, the experiment stations, and the Ministry of Agriculture. They are connecting links between research and practice.

They simplify and clarify research information to enable local people to understand and apply it, whether on the farm, in the home, or in marketing procedures, or community organization. Maybe the following case story will help us appreciate the role of the university specialists in the service for public.

In 1956 the spotted alfalfa aphid damaged over a $100 million worth of alfalfa in California. University specialists were asked to help. They recommended three Middle Eastern parasites of the wasp family, "selective insecticide (killing that particular aphid without killing other insects), and a new aphid resistant variety. The aphid became eradicated. About $13 million were saved per year since then. So the integrated pest control effort proved superior to the heavy use of insecticide alone.

The use of Middle Eastern wasps provided an interesting example of international university cooperation. The University of California sent Dr. Robert Van Den to the Middle East to study more about the biological control agent (controlling one pest through the use of other live pests). After consulting with some of the agricultural faculties in the Middle East, he chose three wasp varieties which sting the aphid to death; then lay eggs on it which provide new generation of aphid killers.

He brought these varieties to California, bred and placed them in the alfalfa fields. This has played an important role in this integrated effort of aphid control.

2. Workshops. The university can sponsor a variety of workshops for the upgrading of extension personnel and to enable them to be of better service to the community. These workshops can be for extension administrators, supervisors, specialists, editors and for those engaged in extension research and evaluation, etc. It goes without saying that here again the cooperation of extension personnel play important roles in the determination of the content of the workshop. They have to participate and bring out their operational problems and concerns, and these should constitute the bulk of the workshop's discussion material.

3. Evening courses of many kinds are offered by the university. Example: Suppose the owner of a machine shop requests the university to provide a course for them and their employees.

Other examples of what a university can do for extension in its developmental work are:

a. Correspondence teaching
b. Summer school programs
c. Press and publication services
d. Conferences
e. etc.

The Faculty of Agriculture of Kabul University has not yet been involved in many extension activities. Some workshops, lectures, conferences and tours have been provided, but I think it can be of more worthwhile service to the Ministry of Agriculture in serving rural people.

I strongly believe that the existence of sound cooperation between the Faculty and the Ministry will be of great mutual asset to each other, and in helping rural people get benefits from our scientific and technological advancements of today.

The immediate pressing problem seems to be how to establish a sound and practicable line of cooperation. The two institutions see each other very far apart. Vested interests of the higher officials play important roles in the existence of present situations. To each official, his was the best and perhaps the most secure one. There is always fear of making mistakes and thus losing his job in doing new things.

There are two suggestions, however, that can be made:

1. Professor Flores emphasized the significance of the publications and information of the university as demanded by the Ministry of Agriculture personnel. I think this is an area when a university must concentrate its efforts even regardless of the above aim. A university should provide the public with valuable reading materials.

2. Some of the Faculty's or Ministry's professionals who firmly believe in the idea of cooperation should work hard and try to do striking things along this line in order to get and hold the attention of the higher officials. They should publish articles in the most popular newspapers, give speeches (over the radio if possible) and pin point the shared aims of the two institutions and explain the mutual benefits in cooperation. They should also try to influence their colleagues and strengthen their aim.

CONCLUSIONS

The universities of agriculture can play a role of significant importance in the development of agriculture. The main functions performed by the universities which are related to the development of agriculture were: teaching, research and extension.

Teaching at the Faculty of Agriculture of Kabul University is more or less in the traditional way. Courses in extension and sociology are badly needed. Research in agriculture is at a good start. No research, however, is done in extension methodology. Few workshops, conferences, and tours have been arranged by the Faculty so far, but it needs to get involved soon in more and more extension work.

It should be re-emphasized that the agricultural universities need a close relationship and cooperation with agricultural extension services in order to be of real service to it in its developmental activities. The universities must be familiar with the problems and concerns of extension and finally with that of rural people and their communities in order to orient their effort toward those basic concerns which are a special feature of the modern universities.

BIBLIOGRAPHY

Charles T. Hitch, "The Role of Universities in Research and Public Service," The Asia Student, Vol. 15, No. 19, Jan. 28, 1967.

Duncan, James A., "The Role of Universities in the Development of Agriculture," A lecture seminar presented at the University of Santa Maria, Nov. 24, 1965.

Seminar Proceeding of the First National Ag. Ext. Seminar, April 2 - May 1, 1964. Information Production Center, Dept. of Ag., Ministry of Ag., Khartoum.

Hannah, H. W., Resource Book for Rural Universities in the Developing Countries, University of Ill. Press, Urbana and London, 1966.

Moreman, Albert H., Agricultural Science for the Developing Nations, Washing, D. C., 1964.

Morton, John R., Director, "University Ext. in the U. S., University of Alabama Press, 1952.

Brunner, Edmund deS and Yang, E. Hsin Poo, "Rural America and the Extension Services," Bureau of Publications, Teachers' College, Columbia University, New York, 1949.

The Development of the Land Grant Colleges and Universities. Addresses given in a seminar sponsored by the College of Agriculture, Dorestry, Home Economics and W. Virginia University, during the year 1962, W. Virginia University Bulletin.

SOME FACTORS AFFECTING COMMUNICATION IN EXTENSION WORK IN DEVELOPING COUNTRIES

Mary Jean McGrath

Extension workers, adult educators, community development personnel and cooperative education officers all agree on the need to use modern methods of communication in their efforts to bring about social and economic change, particularly in developing countries.

Indeed, the central offices from which these change agents work are often well equipped with a movie van, projectors, loud speakers, filmstrips, and even overhead projectors, not to speak of humbler visual aids such as flip charts, flannelboards and posters.

However, the same change agents who initially ordered this equipment to help them reach a mainly illiterate populace, may now be among those who confess they actually make little use of these communications tools, and that much of the equipment sits in the office most of the time.

Of course, it would be foolish to discount the strong influence of custom and the rigid patterns of education still followed in many parts of the world, which inhibit democratic small-group communication and participation. Frequently development agents have reported[1] that movies are mainly used as entertainment to entice a crowd. Then, when the people have gathered, the traditional formal talk takes over as the medium of instruction.

But let us presume that the extensionist is well-educated, democratic in his approach, and well-intentioned. Even these men make relatively little use of audio-visual methods in their field work. Why? The purpose of this paper is to look at some of the difficulties common in developing countries in extension education, and where possible, suggest successful techniques worked out by many resourceful and dedicated field workers for dealing with them.

I. PHYSICAL PROBLEMS

There is no lack of information on communications principles and techniques. In fact, a number of centers have been established specifically to serve the needs of extension workers in developing countries. (Please see the appendix for a listing, with addresses.)

However, most of the materials developed in these centers is based on experience in developed economies, and not all of it is practical in poor countries. Materials and techniques that work in the United States or Europe don't always work the same way in Africa, Asia or South America.

Furthermore, much of the audio-visual training of extension workers is done in modern facilities, and takes for granted resources and conditions that not many developing countries can offer.

Just the fact of operating out-of-doors, common in most instructional situations with adults in developing countries, poses problems.

For instance, one is not aware of the many distracting background noises until he tries to make an explanation to a group out in the open air. Frequently some sort of amplification equipment is necessary to be effective. And yet, aside from costs, and the difficulties of carrying batteries or finding electrical outlets, just the fact of using a microphone often puts a subtle barrier between the speaker and his audience; it makes the presentation much more formal, much more like a speech, and less like a conversation between friends. Sometimes even a man raised in the country is surprised when he first makes a presentation or a talk to a small group out in the open, to find that he cannot be heard because of noises of animals or chatter of people that he unconsciously took for granted.

Outdoor meetings are further handicapped by distractions of passersby, curious children, insects and, sometimes, sun and wind.

Persons preparing visual aids for use outside should be aware that people commonly sit farther apart out-of-doors and farther away from the speaker. For good visibility, this means that signs and posters and writing on a blackboard have to be larger. Bright sun and resultant glare demand intense, bright colors and large-scale illustrations with simple details. Illustrations that look big and bright at three feet in the workshop, often pale into insignificance when displayed out in the open.

In windy climates, flannelgraphs are almost useless outdoors. Flip charts and separate pictures are also hard to manage on a breezy day. The extensionist would do well to carry a supply of spring-type clip clothespins and thin twine for controlling both flip charts and posters in breezy areas.

In a humid climate, flannelgraphs are not too practical. The cutouts curl and therefore do not adhere to the backing, and it is difficult to store them without warping. (In the central office of a national cooperative federation, the writer once observed stacks many feet high of flannelgraph cutouts that had absorbed water during the rainy season and had dried warped and useless. These silk-screened figures, produced for national distribution, had cost considerable money but were now completely useless.)

In climates with such humidity, it is recommended that the flannelgraph be used only during the dry seasons, and that signs and cutouts to be used on it be made fresh each season on lighter weight paper.

Literacy House in Lucknow, India, has produced a low-cost setup for flannelgraph presentations. Simple outlined pictures reproduced by hectograph or "ditto" are sent out in booklet form (eight and a half by eleven inches in size.) The user then colors the pictures with crayon or paint, cuts around the outline and pastes a bit of flannel or sandpaper to

the back of the picture for adhesive quality. The background used here is khaddi, or homespun, a rough cotton material. It is not as good as flannel, but it is cheap and available everywhere in the country.

An old "army blanket" will serve as a flannelgraph background, and the olive-drab color is surprisingly effective as a background for signs and pictures.

When using substitute materials in making flannelgraph signs, be sure to test the adhesive material used on the back of the signs. In general, the poorer the adhesive quality, the larger the area of the sign that must be covered by it.

Motion picture projectors used in damp climates need special "acclimatizing" when they are purchased, and this has to be renewed periodically to keep the projectors functioning properly. Naturally, it is not always easy to get this done when the machine is bought abroad and there is no local office for service.

Showing films out of doors has a number of drawbacks. Even if you have a power take-off so that you can show a film where there is no local electricity, you have to wait for darkness to fall. In the very countries where this is necessary, of course, there are no lights on the roads, and many people hesitate to travel at night to a meeting for this reason. The common advice to "test the projector and run the film through once in the location where it will be used" isn't practical in such a situation. The crowd normally gathers early, and there is no privacy for on-the-spot checking of the equipment.

One writer once accompanied an audio-visual team to a village in North India for a film showing. The equipment had been carefully checked before the trip, and all was in readiness when darkness came. But the projector failed to work and required fifteen minutes of work with kerosene lantern and flashlight before the show could go on. In the United States, we would have just "clicked on the house lights" and made the adjustment in a few minutes. After a few experiences of this kind, the field worker decided he would be more effective if he just went out to the village to visit with the people, without depending on temperamental equipment.

Rough roads and dust are hard on audio-visual equipment, too. Repairs and replacement of parts are hard to get abroad on short notice. Most of the machines in A-V vans in developing countries are manufactured in another country. Even if there is a local sales office for that brand, it is often unable to make repairs and obtain spare parts.

To cut down on the problems with mechanical equipment, experienced men in the field offer the following advice: (1) Don't purchase equipment abroad unless there is a local scales office for that brand in your country that will order spare parts for you; (2) Don't buy the most elaborate model, even though it may offer some advantages. So far as

possible, stick to the simplest machine you can buy, because chances are that fewer things will go wrong with it, and you will have a better chance of being able to have it fixed locally when it does need repair; (3) Buy a model that has been on the market for several years; by then the manufacturer will have had time to correct any flaws in the design; (4) Make sure the manufacturer guarantees to supply parts for the model you buy, for a stated number of years; (5) When you buy, demand a repair manual and a parts catalog. A good mechanic can fix many machines if he has a guide to follow and often can improvise parts on the spot; (6) Ask for a demonstration of the machine you buy, and make sure that you understand every step of the operation. Do not be content to merely observe the salesman operating it, but go through the process yourself and have him check your performance step by step; (7) Find out which parts are likely to wear out first, and which will need to be replaced after a normal period of wear - for instance, the light bulb in a projector - and then spend the extra money to stock these parts in your own shop; (8) If you need more than one machine of a given type, order the same brand for interchangeability.

Even where electricity is regularly available, and where meetings are held indoors, it is frequently impossible to darken the room for fullest quality of viewing of movies and slidefilms. Therefore, it is well to choose projectors with a brighter lamp, where possible, because this is the only type that will give an acceptable picture in a bright room.

Battery-operated and kerosene projectors have been tried in placed where there is no electricity, but results are usually so poor that extension workers often recommend switching to other types of visual aids under these conditions. A film image that is inferior, or too dim, will not hold attention, and may even alienate an audience. It is hard for a person showing the same film a number of times to remain objective about it, and to evaluate its effect on others. He tends to remember how the film looked under the best conditions, shown with a good projector in a dark room at headquarters, and so when he shows it under poor conditions, he may imagine it is more effective than it is. Advice on such film showings is, "When in doubt, leave it out!" If you do show a film that is not coming out as clearly as you like, don't make the mistake of telling the audience how much better it looked when you saw it before. Instead, if you must continue with the showing, highlight the key points with a simple one or two-word identification of items that may be misunderstood in the picture because they cannot be seen clearly.

Sometimes extensionists concentrate so much on getting the latest in audio-visual equipment that they forget the older, simpler aids, and neglect to make the best use of them. For instance, in one developing country the writer visited a number of training centers for field workers, many of them quite new buildings and otherwise well-equipped, without finding one center with a good blackboard!

Of course, this situation could be easily remedied by applying good quality blackboard paint to any smooth surface. A portable blackboard is easily made by painting an ordinary roller window-shade with blackboard paint, taking care to apply thin coats.

No doubt every extensionist from a developing country could add countless examples of physical and financial handicaps, and could also tell of many ingenious methods worked out to overcome them.

Annoying as they may be, these physical difficulties are small when compared with the frustrations of the change agent due to more serious communications handicaps.

CULTURAL-SOCIAL PROBLEMS AND ILLITERACY

When the extensionist tries to teach new methods in a developing country he often runs into severe communications problems that are the result of traditional cultural patterns which impose a set style of life, and therefore a set way of thinking. Usually illiteracy is a complicating factor. Once instance comes to mind:

A field worker in Egypt showed a film made in the United States to a group of farmers in a remote area. In the movie, the wife of the leading character wore a red dress. Red is the color for a wedding gown in that part of the country, so the group was completely absorbed in watching for the wedding party, and missed entirely the message of the film. No doubt this was difficult for those who selected the film to anticipate. They had more education and readily understood the content of the film. They did not, in fact, even notice the red dress in previewing the film; they were concentrating on the new ideas taught by the picture. But they forgot that the men who would see the film were, in the main, illiterate, that they had never been away from home, and had no idea that other people's customs were quite different from theirs. Lack of experience combined with illiteracy also restricted their imagination and made it difficult to transfer practices from a foreign setting to their own.

For deeper understanding, it is valuable to take a closer look at the nature of illiteracy, and at the economic and social situations which commonly accompany it.

"Literacy is the primary index of national development, because it is the primary factor in participation in modern life," said Dr. Francis Shoemaker, an educational psychologist of Columbia University, in a perceptive paper on the effects of illiteracy delivered in India.[2] In this paper Dr. Shoemaker brings together insights from several disciplines that reveal why certain communications techniques work in one situation and not in others.

The Biological Perspective

Shoemaker says, "Adults learn to read and write precisely as children do," although he points out their progress may be faster. First, a human being acquires audio-oral images (or 'pictures' in the ear and throat) of what he hears. Usually by the age of six he knows the principle patterns and constructions of his native language: the sounds, and how the sentences are put together, and also what the various intonations mean. When he gets older and learns to read and write he learns to substitute a new set of symbols for the noises he hears and makes. He learns the alphabet, and these letters give him a visual image of what before existed for him only in sound. We know that for the rest of his life when a person reads and writes he 'speaks' in his mind; he hears in his 'mind's ear' the audio-oral image, which carries the emotional content of the message.

To make this clear, imagine an angry man, shouting through clenched teeth at his enemy, "I hate you!" Then picture a pair of young lovers. The young man playfully pulls a curl of the girl's hair, and she smiles, saying teasingly, "I hate you!" The angry man and the pretty girl used the same words, but with opposite meaning; the meaning was carried in the voice and in physical appearance.

Now, since words first come to people in oral images, through the ear, we should get the clue here about which language to work in; if at all possible, we should start by providing simple printed and illustrated materials for extension use in the native tongue, in the language that the man learned at his mother's knee, because this language for him will always carry the emotional load, the content of feeling, far better than a second, or trade, language.

This is particularly important for those in extension work, because extension is really building new patterns of behavior. For a man to change his behavior requires a will to change, a desire, and this involves the emotions as well as the reason. We would be wise to make use of the fact that the emotional content of the language is carried through the sound, and as far as possible, work by personal contact, through work of mouth, by messages that come through the ear.

Shoemaker defines literacy as "the acquiring of visual images of words that, before, were known only sound." If we define literacy this way, we can see why illiterate adults are best taught to read and write by giving them material that is familiar and useful, because the words they regularly hear, use and respond to most are the familiar and useful words. So we find that agricultural bulletins and leaflets on health, child care and cooperatives are being used in literacy classes. Specialists in literacy are turning away from the use of primers and now are seeking good, up-to-date materiai based on the needs of daily life and farm. This is a tremendous opportunity for the extensionist, who has among this group of new readers highly motivated people, who have already taken the first steps to accept new ways; who are ripe for innovation in other fields.

A second point, again from biology: children, we know, acquire words through direct experience. That is how they build their vocabularies. If an adult is to build his vocabulary, and his ability to comprehend new ideas, we must help him have more experiences, either through direct observation or vicariously through pictures. Therefore, the field workers will find it valuable to collect pictures, all kinds of pictures, but especially those showing the types of changes we would like to introduce; for instance, pictures showing different agricultural methods in different surroundings, in various relationships, and in a wide variety of applications. Never throw out a magazine without going through it first for every possible picture that could have use in your work; to show how and in what different ways a product or a service is used.

Still pictures often have greater usefulness than movies or filmstrips, because they can be examined at leisure, questions can be asked, and items can be pointed out and explained. A good rule in extension work is never to show a picture without an explanation. Pictures on display should carry a title or a caption in a few words, simple enough for the person of limited reading ability to understand. Gradually, illiterates or semi-literates will link the words and the pictures. If pictures are mounted on uniform-sized cards they can easily be filed, carried or sorted to be used in building different presentations.

If pictures are being prepared for field use, punch small holes, or eyelets in the top border of the mounting, two holes to each picture. Then the pictures can be hung on strings, or even strung in a row between trees, if other support is lacking. When introducing new ideas with the help of pictures, select pictures which show the item in use, and also in relation to other objects, to indicate <u>size</u> relationships.

All the evidence shows that visual aids are not a substitute for reading, but that they depend to a great extent on literacy for their effectiveness. Illiterates misunderstand pictures and misunderstand films because they have no chance to learn about the lives of others, their progress, their successes and failures, through reading. They are closed off from the experiences of peoples in different ages and cultures; their illiteracy has locked them in the here and now - locked them in time.

Best results with visual aids in extension work with illiterates come when the <u>visual</u>, the <u>oral</u> and the <u>print</u> are all used together, so the person can connect them in his mind on the spot.

For instance, if we were to show a film on how to graft fruit trees to an audience where grafting has never been done, we would be wise to prepare the group not only with an introductory talk before showing the film, but we should supplement the talk with some pictures and charts showing various steps in grafting, with the key words spelled out on the charts very large. We should read these words to the group, pointing to

the item on the chart or picture, so when they hear the word the first time in the film, they will understand it. Otherwise they may be so distracted that they miss the main idea of the picture. It would be wise to show before and after pictures to illustrate how grafting improves the crop, and if possible, show results in a variety of situations. Otherwise we may get the reaction, "But, we don't have trees like that here."

The Psychological Perspective

Now, let us look at illiteracy from another perspective. "Psychologically, language learning is the key to personality development," says Shoemaker, ". . . and the quality of control of language, including literacy, is a key determinant of the quality of life a person leads. . . The pre-literate lives in a completely audio-oral life. . . where words and things are inseparable."

He has no way to question the traditional behavior that is passed down to him by his father: 'This is the way you plant corn' is simple the way - what exists. Such a man has "an infinite capacity for what we call boredom and repetition." That is because choices, and innovation are not in his tradition. This is exasperating to the extension agent whose whole purpose in life, by definition, is the exact opposite, and many change agents become impatient with their own people because they have forgotton, or they never knew this life themselves.

If we can understand the psychology of illiteracy, we can open the door to how to solve a lot of communications problems in extension work. First, the extensionist should realize that illiteracy is not simply a case of a man having less knowledge. We cannot represent the progression from illiteracy to literacy on a continuum; rather it is a change from a completely different life. The illiterate cannot read the directions on a bag of fertilizer, or on a bottle of medicine. What the extension agent tells him, he must be very careful to remember, word for word. If the message is new and is outside his traditional frame of reference, he cannot remember it, because he did not understand it in the first place; it was, literally "beyond him." If the illiterate makes a contract, he may sign with his thumb, but usually he doesn't understand what he signed - often until he finds out that "magic" sheet of paper can take away his house or his bullock. Is there not magic in a paper so powerful?

When a man moves from the totally oral to even partially print life, the whole way of life changes. The printed word, visible, and separate from the built-in voice and hearing of the body, make it possible to separate words from things; it gives us a visible symbol for the thing that enables a man to think on a new and higher level of abstraction. Now he can detach the word from the thing, use it in his imagination to apply to many different situations. It is no accident that many illiterate societies have no word in their languages for 'number'.[3]

This points out another reason why illiterates frequently misunderstand visual aids: they depend highly on the ability to abstract, and on the use of symbols. Even a realistic picture is a symbol. It is not exactly like any one real thing; rather it is a symbol for a whole class of things.

More important than the limitations on the ability to abstract, is the effect of illiteracy on the personality. The illiterate who does not separate the word from the thing, also does not have a fully developed idea of himself as a separate person. He sees himself more often in his role in society. Often if you ask him his name, he will tell you his job, or say he is the son of so-and-so. He identifies with his family, his caste, his place in society, because this is what gives him his personality structure, his social approval and his personal satisfaction: filling an appointed role. Therefore he is used to thinking of himself as an object. Shoemaker says, "Where the audio-oral person has perceived himself principally as an object receiving action and attention from others, the literate person separates the I from the ME and becomes both active agent in his environment and recipient of action - and presently, the recipient of his own planned action."[4]

Marshall McLuhan also comments on the personality of the illiterate, saying, "Tribal, non-literate man, living under the intense stress on auditory organization of all experience, is, as it were, entranced."[5] The traditional illiterate sees his life as dominated by fate, by mysterious powers he cannot control and can only appease by accepting gracefully what happens to him. No wonder it is difficult to get such a man to accept new ideas!

But, with the coming of literacy, there is a dramatic change in the man's perception of himself. "The major result of literacy is self knowledge," Shoemaker points out. The new-literate leaves behind the closed world and "enters into a new world of personal choice and decision-making."[6] His decisions can be made in imagination now, as well as in actual practice; he can mentally "leave home," try new ideas, new attitudes and new human relationships - in short, he can make choices. He can think now in a new way about his village, his relations with his own family; he can see new ways to be a responsible citizen. He looks at the daily routines of cultivation, harvest and distribution in a new light - he can begin to really think about farming as a business.

How does one put these concepts to work in an extension program? Here are a few practical suggestions that do not involve much expense: First, hang a mirror in your office, or extension headquarters. Many village people have never looked in a mirror; they have no sense of themselves from the outside. Knowing what he looks like to others helps a man develop his consciousness of separate identity, of self separated from environment.

Second, display photos of farmers who have adopted new practices. If this is done simply, without flattery, it helps to make new practices

socially acceptable. Third, display maps of the area, and larger maps indicating where the area or the village is in the country; where the country is in the world. Fourth, even in simple folders designed to give instructions, ask questions, and pose problems, to get the farmer in the habit of making choices, or at least of realizing that choices are to be made, and that the success of his crop can in some way be affected by his decision-making. Fifth, ask the local farmers to set their own goals, or if predictions of the future are frowned upon in that culture as sinful or unlucky, get the farmers to total up what they produced in previous years, so they form the habit of record keeping and begin to think of agricultural activity as a business.

The Sociological Perspective

In his examination of the effects of illiteracy, Shoemaker draws on the ideas of two well-known sociologists, Daniel Lerner and David Reisman. From Lerner's research in the Middle East, reported in The Passing of Traditional Society,[7] Shoemaker picks out the concept of empathy, the ability to enter into alternate ways of thinking and living, and to mentally participate in the ways of others, which develops with literacy and exposure to mass communications.

Reisman, however, is more helpful in completing Shoemaker's analysis, because his three kinds of society and the accompanying personality types he describes in his book, The Lonely Crowd,[8] have certain communications that affect development.

Specifically, traditional society is characterized by complete dependence on audio-oral transmission of ideas and values from one generation to the next. Often, people in such a society live under a type of controlled tension which is released periodically in festivals and in regular, socially-approved boistrousness or even violence. Their behavior is "coded for perpetuation and reduplication." Here we have another clue as to the reason for the resistance to new ideas of traditional groups, who on the surface may appear to accept our communications and agree with them. Reisman calls this group tradition-directed.

With literacy and rapid physical expansion of the colonial era came a new type of society Reisman calls inner-directed, because the patterns of behavior were instilled as principles which could be applied to a variety of changing situations. He likens them to a gyroscope inside each individual, which gives him stability. Ability to read reinforces these patterns. Reisman gives the example of the press in Poland, which "supported very specific 'character building' measures, such as temperance and thrift, and fostered scientific farming as the American agricultural extension services have done; science was viewed as a kind of inner-directed morality as against the superstition of the remaining, tradition-directed peasantry."[9]

In the third form of society that Reisman describes, called other-directed, people look outside themselves for their values. They are highly aware of what other people think, and their goals shift in

accordance with the values of others. This type of personality seems to emerge in areas of rapid industrialization, urbanization, heavy exposure to mass media, and where populations become concentrated. Of course, all three stages of societal development exist in varying degrees in most parts of the world. But Shoemaker cautions:

> "The hazards of this form of personality are obvious for a culture emerging to world responsibility. A new nation coming of age in a period of high use of such audio-oral forms as radio and audio-oral-visual forms as motion pictures and television, but without the prior development of the inner-directed control that print provides, may be subject to mass manipulation of imagination and mass action."[10]

Clearly, the extensionist is being told that reliance on new audio-visual methods to skip the literacy stage is not only futile, but it is also dangerous. Of course, we are not being told to discard modern methods of communications, but rather, to use them wisely, realizing their limitations, as well as their great power.

For instance, in using radio in extension work, we should realize that the oral message alone might be misunderstood. We must build into our program supplementary materials to illustrate and anchor down what is heard to the life of the people; otherwise, the new information by radio will be wasted. Leonard Doob reports in Communication in Africa traveling with a bright African student who insisted on stopping each evening to hear the seven p.m. news broadcase, but who could not remember a single word of what he heard after the program.[11] The same could be true of the extensionists' broadcasts on pest control. Some way has to be found to make the program content relevant to the immediate concerns of the listeners, if we want them to learn and remember it.

Experience of agricultural extensionists in the state of Madras, India, offers us a method of dealing with this problem.[12] At first, to stretch scarce specialists, the extension service used general radio broadcasts on basic topics important to the agricultural development of the state. However, the people did not generalize from what they heard and apply it to their own situations. Furthermore, even the accent of the announcer or speaker, if he was not a local person, alienated the people. Therefore, the state decided to localize all agricultural information broadcasts, giving local extensionists authority to broadcase on small, local stations. All the network programs from headquarters were replaced by these local programs, with local agents talking about local conditions in the local dialect. The agent invited questions, and a special effort was made to see that each question was answered and that the answer went into the mail the day after the questions were received. From those questions submitted, one was selected each week to be answered on the air.

Listeners would eagerly wait to hear these questions answered, hoping to hear their names, or their village mentioned on the air. The answers came after a short talk and the market news.

The entire scheme would have failed, however, if arrangements had not been carefully made to ensure prompt answers to questions by the specialists to whom they were relayed. This was a major factor in building interest in the program.

Instead of rejecting radio as impractical after the initial failure, this agricultural service worked out an effective way to use the medium. Incidentally, the local agents who made the local radio shows had no special training in radio, but were reported to have done surprisingly well, after the initial period of nervousness wore off.

ARTISTIC CONVENTIONS AS A COMMUNICATIONS BARRIER IN EXTENSION

So far we have concentrated on barriers to communication that arise from lack of facilities and from social and cultural problems arising from illiteracy. One other barrier needs to be mentioned here because it falsely is identified as a literacy problem by some extension workers.

This is the difficulty of transferring audio-visual techniques from one culture to another because of different artistic conventions. These conventions are in the mind, not the eye, and they are related to the culture, rather than to the educational level.[13]

For example, depth perception appears to be a learned trait, and ways of representing depth are artistic conventions. Traditional Chinese and Japanese art portrayed depth by height. The long scroll paintings showed items in the distance higher up on the picture than those in the foreground, which are found near the bottom. Items in the distance might be the same size as those in the foreground. In present-day Western art, we show distance by a system of three-point perspective that is also a convention. We know railroad tracks don't converge in the distance, but we see and draw them that way. Not all peoples see them that way. For some Africans, for example, overlapping places in a picture don't represent distance as they do for us, and the drawing of a doorway is seen as a bed by the same people, because of its rectangular shape.

Some Africans represent a profile of an animal or man with two eyes. We are familiar with ancient Egyptian art which shows men half in profile, half in front view. Obviously, these are artistic conventions.

Naturally, with exposure to different cultures, we modify our own way of looking at things, and eventually, even our way of depicting them, but some of our artistic conventions seem surprisingly durable.[14]

The difficulty arises in extension work when outside specialists are invited to come to a country and prepare visual aids, or when local men are sent abroad for training in this field. Often, both groups prepare materials that are not appropriate for the culture in which they will be used.

When this becomes apparent in the field, the cause is sometimes set down as illiteracy. Often, the problem rather is that the visual aids are using the conventions, the symbolism and the 'language' of a different culture, and this is particularly confusing to the illiterate.

Since we all take our own conventions for granted, it is easy even for the educated man not to see them as "conventions," and therefore it is also easy for him to discount the host of concomitant values that attach themselves to even our artistic conventions.

It is particularly important for the change agent to make maximum use of all the acceptable existing values in a culture, to reinforce and direct his message home to the people in the most effective way. For this reason, the change agent in particular should be reluctant to use a new artistic convention if he has an old, accepted one that will do the job.

(We are leaving aside here the importance of preserving local artistic traditions, for their own unique cultural value.)

For all of these reasons, the extensionist in the developing country who adopts new technology in creating visual aids should guard against adopting too quickly new or foreign artistic conventions when he creates materials for extension work.

CONCLUSION

Even this brief excursion into several aspects of the vast subject of communications as it applies to extension work in developing countries is enough to make us aware that we cannot expect automatic success when we use the methods of the United States or Europe in other countries. However, there is relatively little in print to guide us in how to do better.

Many extension workers who have sought solutions to their practical problems in developing countries in the adult education literature have been frustrated by the scarcity of research on applications in developing countries.

To fill this gap, the professional journals of the social scientists need to be more intensively mined by extensionists for reports of studies in communications in all its phases. Then we need some careful collation and some imaginative extrapolation, followed by field testing of new approaches and techniques suggested by previous research.

Those who undertake this work will find plenty of room for exploration and many extensionists willing to cooperate in research projects, and eager to put their findings to practical use.

APPENDIX

Sources of Assistance in Preparing Materials for Extension Work in Developing Countries

I. For Africa and Asia

Oversea Visual Aids Centre
Tavistock House South
Tavistock Square
London W.C. 1

Literacy House
Kanpur Rd.
Lucknow 5, U.P., India

National Institute of Audio-Visual Education
Indraprastha Estate
New Delhi, India

Laubach Literacy Center
Karthicappally P.O.
Keral, India

P.A.R.D.
Kotbari, Comilla
East Pakistan

Literacy Center of Kenya
P.O. Box 12511
Nairobi, Kenya

Mr. Mohammad Shamy
Box 151
Ramallah, Jordan

New Readers Press
Box 131
Syracuse, N.Y., U.S.A.

II. For South and Central America

Programa Interamericano de Informacion Popular
Apartado 1587
San Jose, Costa Rica

Programa Interamericano de Informacion Popular
Casilla 5060
Montevideo, Uruguay

Mr. Jack E. Schunk
Caixa Postal 2253
Recife, Pernambuco, Brazil

Centro Regional de Education Fundamental para el Desarrollo de la Comunidad en America Latina (CREFAL)
Patzcuaro, Mexico

Regional Training Aids Center (RTAC)
AID, c/o U. S. Embassy
Mexico, D.F.

Fundacion Alfabetisadora Laubach
Apartado Nacional 7332
Bogota 1, Colombia

New Readers Press
Box 131
Syracuse 10 , N.Y., U.S.A.

Notes and References

1. Reported by cooperative field workers attending the International Cooperative Training Center, University of Wisconsin, in classroom discussion.

2. Francis Shoemaker, "New Views on Literacy and Materials for Literacy Teaching," Report of the Seminar on Literacy, New Delhi: National Fundamental Education Centre, 1962.

3. Thomas Dantzig, Number, The Language of Science (4th ed. rev.; New York: The Free Press, 1967), p. 249.

4. Shoemaker, loc. cit., p. 84.

5. Marshall McLuhan, The Gutenberg Galaxy (Toronto: University of Toronto Press, 1962), p. 24.

6. Shoemaker, loc. cit., p. 84

7. Daniel Lerner, The Passing of Traditional Society (New York: The Free Press, 1958).

8. David Riesman with Nathan Glazer and Reuel Denney, The Lonely Crowd (New York: Doubleday Anchor Books, 1952).

9. Ibid., p. 111.

10. Shoemaker, loc. cit. p. 87.

11. Leonard W. Doob, Communication in Africa, (New Haven: Yale University Press, 1961), p. 286.

12. Interview by the writer with the person in charge of extension radio, 1964, Madras.

13. A growing body of observation and research substantiates this. Specific references include McLuhan, op. cit., Doob, op. cit., and Alan C. Holmes, A Study of Visual Symbols in Kenya (London: Oversea Visual Aids Centre, Publication No. 10, 1963.

14. W. Hudson, "Cultural Problems in Pictorial Perception," South African Journal of Science, Vol. 58, No. 7, July, 1962.

EXTENSION APPROACHES APPLIED IN TAIWAN, CHINA

Chen Chin-wen

Different methods and/or media have been used by extension workers to promote the adoption of better agricultural and home improvement practices.[1]

In a broad sense, extension procedures include not only the use of local leaders in carrying out extension programs, but also the involvement of local people in planning, executing and evaluating extension programs.

The primary purpose of this paper is fourfold: (1) to bring up a study of extension teaching methods in Taiwan; (2) to discuss the organization of extension clubs as a method to work with farm people; (3) to discuss the use of local leaders as a procedure to carry out extension work, principally on the use of local leaders to help low-income farmers; and (4) to draw implications for other developing countries.

Extension Work in Taiwan

Historically, Taiwan has been doing agricultural extension work for a long period of time. Today, quite a few agencies - public, semi-public and private - are engaged in some type of agricultural extension work. However, the federated system of farmers' associations, which has an agricultural extension staff of about 1,600 and operates at the provincial, county and township levels, is regarded as the most important agency in carrying out agricultural extension work in Taiwan.

Since the initiation of 4-H club work in 1952, the farm extension education program in 1955, and the home economics extension program in 1956, most of the extension workers of farmers' associations, especially at the township level, have been carrying out these three phases of extension. Other workers do veterinary and general agricultural work for about 830,000 farm families.

About 80 percent of the township farm and 4-H advisors are graduates of senior vocational agricultural schools. The rest are graduates of junior vocational agricultural schools or other types of secondary schools with previous experience in working with farm people. (Only three of the farm and 4-H advisors have some college education) The majority of them have worked as extension advisors for more than five years. On the average, there is one farm advisor for every 1,500 farm families. The job of farm advisors include: organizing farm discussion groups with adult farmers, making farm and home visits, conducting result demonstrations and training meetings for farmers, etc. A 4-H advisor usually works with 200-400 4-H club members enrolled in different projects such as rice, vegetables, poultry, etc.

About 85 percent of the home advisors are graduates of senior vocational home economics schools. The rest are graduates of other types of secondary schools. Their job is to organize home improvement clubs, make home visits and encourage farm women as well as 4-H girls to adopt home improvement practices. In all extension programs, local leaders are used to help expand extension coverage.

Extension Teaching Methods[2]

A survey was made of 630 farm families in 42 townships. In each township five villages were selected. Fifteen families were surveyed in each village. An interview schedule was used to find out at what stage of adoption these farm families were in terms of improved practices in rice (5 practices), sweet potatoes (2), soybeans (2), bananas (3), pesticides (2), peanuts (2), corn (2), sugar cane (3), pig raising (2), poultry raising (2) and home improvement (2). Only those improved practices being followed by the farmers plus swine and poultry raising and home improvement were studied.

Data were collected on the following stages of adoption:

1. Awareness stage
2. Interest stage
3. Evaluation stage
4. Adoption stage

The "trial stage," as used by the North Central Regional Rural Sociology Committee[3] in the United States, was omitted since a pretest showed the farmers could not separate the trial and adoption stages. Also the distinction between small scale trial and large scale adoption was vague and optional.

In the study, adoption score method was used to classify the adopter categories. Farmers were asked about the adoption of some 15 practices (innovation) in order to find out at which stage the farmer said he was in relation to the practice. A weight score was given to each adoption stage (Adoption, 4; Evaluation, 3; Interest, 2; and Awareness, 1). The total score for the 15 items was considered the adoption score of each farmer. The adoption scores were ranked according to the percentage distribution of the following five adopter categories as used by the North Central Regional Rural Sociology Committee[4].

Category	Percentage of normal distribution
1. Innovators	2.5
2. Early adopters	13.5
3. Early majority	34.0
4. Late majority	34.0
5. Laggards	16.0

Based on the study, the relative influence of different methods was grouped as follows:

Methods	Percentage of practices adopted by 630 farm families
1. Indirect influence	25.11
2. Individual contact	38.23
3. Group contact	21.95
4. Mass Contact	9.24
5. Other influences	5.47

How the different methods or communication channels influenced the adoption of improved practices is shown in the following table.

Methods/Channels	Percentage	Methods/Channels	Percentage
Ind. cont. of Farmers' Assoc.	26.82	Result dem.	0.99
Neighbors	25.11	Special event meetings	0.68
Ext. clubs	12.16	"Farmers' Friend" magazines	0.67
Ind. cont. of Public Office	7.31	Unknown	0.59
"Harvest" magazine	4.48	Ind. cont. of V-Ag.	0.58
Businessmen	4.48	Ind. cont. of Dist. Agr. Imp. Stat.	0.50
Short Courses	3.95	Movable units	0.46
Ind. cont. of Sugar Corp.	2.73	Self experience	0.40
Publications	2.10	Ind. cont. of other agencies	0.29
Radio	1.48	Exhibits	0.05
Educ. tours	1.46	Total	100.00
General tours	1.41		
Method dem.	1.30		

From the above table, the relative influence of the various methods as far as the adoption of improved practices by individual farmers is concerned can be clearly seen.

Indirect influence - This generally refers to the influence of "neighbors," "friends," or "other farmers." In this study, it also included the influence of "local leaders." Outstanding farmers in the villages were always chosen by the extension workers as 'model farmers" or local leaders to help carry out extension programs. Evidently, they were cited as "neighbors," "friends" or "other farmers" by the farmers interviewed. Indirect influence was second in importance with 25.11 percent of practices adopted.

Individual contact. - In terms of "individual contacts," local farmers' associations made the most frequent contacts with adult farmers. This indicates the contribution that farmers' associations make when compared with other extension agencies. It also emphasizes the important role of extension workers in farmers' associations. According to the

study, individual contact was also cited most often in all adopter categories except laggards.

Group contact - "Extension group contact" was cited as the third most important method (21.95 percent of improved practices were adopted by farmers). Among different group techniques, contact with "extension clubs," such as farm discussion groups or home improvement clubs, was the technique most frequently cited. Contact with special events meetings was the least cited. The study also reveals that group contact was the method second most frequently cited by all adopter categories except late majority and laggards.

Mass Contact - Mass contact or "mass media method" was the least effective method in getting farmers to adopt practices. Only about nine of one hundred obtained information through mass media. Among different mass contacts, "Harvest," a biweekly agricultural magazine, was the most frequent and "exhibits" were the least frequent sources cited. Furthermore, mass contact made the poorest showing in all adopter categories, except in the case of "innovator," where it was rated third in importance.

Many people in Taiwan have believed that the result demonstration is a very important method in teaching farmers to adopt innovations. Others have given radio much credit. Results of this study show, however, that they are not as effective as believed.

Some factors which affect the adoption of improved practices in Taiwan can be summarized as follows:

1. Social status: It is found that the higher the social prestige and living standard a farmer has, the more likely he is to adopt improved practices. Actually, this is a socio-economic factor, because living standards and even social prestige have always been connected with a farmer's economic condition.

2. Size of farm: The percentage of farmers adopting new practices tends to increase as the size of farm increases.

3. Farm implements: A farmer who has better equipment is likely to adopt more improved practices.

4. Age: The highest percentage of adoption was in the age group 30 to 39 years old; the second highest in the 40 to 49 group.

5. Participation in farm discussion groups and home improvement clubs: Farmers and/or farm women who have participated in the farm discussion groups and/or home improvement clubs show a higher percentage of adoption.

From the study, one can see that "individual contacts in the farmers' associations, "neighbors" and "extension clubs" are the three most important channels or methods through which farmers obtain information leading to the adoption of improved practices.

The Organization and Activities of Extension Clubs

Farm discussion groups for adult farmers, home improvement clubs for farm women, or 4-H clubs for farm youth make up the extension clubs in Taiwan. These clubs have been organized and favorably accepted by local people. Nowhere does extension get closer to the "rice roote" than in the many extension clubs in rural villages.

In 1956, farmers in Minhsiung township, Chiaya county, requested the general manager of the farmers' association to call a meeting of farmers to discuss their farm problems. Thus, the first farm discussion group was organized. Since then farm discussion groups have increased and today there are about 4,000 groups in the country with a membership of more than 70,000. These groups usually meet once a month to discuss various farm problems and exchange farm experiences. The average attendance is about 90 percent. Many of the members of the groups carry out result demonstrations of improved practices on their own farms. Topics related to their farming make up the program of the meeting. Extension advisors usually have a place on the program and are available for assistance. Meetings are held at night and usually last more than two hours. Some groups specialize in rice, citrus, sugar care or farm

The group members have a common goal and a strong desire to increase their agricultural production and improve their living standards. The cost of rice production has been reduced and cooperative marketing of citrus and vegetables has been developed.

The strong ties of friendship among farm discussion groups was reflected in the rehabilitation work rendered for the victims in the flood areas in August, 1959. Many group members rushed to the most seriously damaged areas where they helped farmers clear their land, repair village roads, build temporary bridges, repair irrigation canals, clean damaged houses, and donated clothing and sweet potato seedlings to the victims. The main motive for this action came from the people, and a vast dormant energy in the countryside was harnessed for constructive action through the cooperative spirit of farm discussion group members.

Since 1963, farm discussion groups have been used to promote the adoption of integrated, improved practices of rice cultivation to increase production. Group action is employed to carry out cooperative rice projects. About 300 farm discussion groups have been organized in more than 200 townships. In each discussion group, working teams on rice transplanting, weeding, pest control, etc., are organized to promote the use of all recommended practices in an area of 10-15 hectares of paddy field. As the result of this program, the increase of net earning has been as high as 24 percent over check plots. Besides, many of the neighboring farmers have followed the recommended practices used by the members of farm discussion groups.

In the sugar cane growing areas in the south and central Taiwan, the Taiwan Sugar Corporation has cooperated with local farmers' associations in organizing sugar cane discussion groups. Good results have been shown by this type of extension organization.

Promoting the Extension Program Through Local Leaders

The widespread utilization of the volunteer lay leaders to enlarge extension coverage and increase the volume of extension teaching in Taiwan justifies a discussion of this extension procedure.

In the past few years, the living standard of many farm families in Taiwan has been raised due to increased agricultural production resulting from advanced technology and the increase of farm income principally because of the high market value of exported products, such as bananas, onions, mushrooms, etc. Still, about 35 percent of farm families in Taiwan have less than half a hectare of land to farm, and many of them can be classified as low-income farm families. They are usually technologically backward, burdened with debt, depressed, more or less suffer from inferiority, and tend to isolate themselves.

In 1959 a type of "assistance to poor farmers program" was started in Erhlun township, Yunlin county, on a trial basis. After three years of actual work experience, more townships have joined the program. The growth in number of townships participating is shown below:

Year	Number of township	Number of families assisted
1959	1	33
1960	1	34
1961	1	30
1962	14	190
1963	38	427
1964	85	945
1965	99	1,021
1966	257	2,569

To carry out the program, the "Futaoyuan" (Volunteer Helper) or local leader is the key man for success.

A survey of 173 poor or low-income farmers revealed that the main problems of these farmers were lack of land, poor farming techniques, poor management and lack of capital. To lease a piece of land, to improve farming and management and to get into poultry or livestock raising requires money.

At one of the meetings of a farm discussion group in Erhlun township these and similar problems were brought up. As the discussion proceeded, one farmer offered to lend his nitrogen fertilizer of 240 kilograms

without any interest; the others expressed their willingness to be sponsors for a loan. Someone suggested that the river bed be used for water melon growing and pledged his help.

In this way, many problems have been solved through discussion at group meetings and the voluntary assistance of local leaders. In many cases, the "assistance to poor farmers program" is almost like a group project of the farm discussion groups. The sequence of carrying out the program usually followed by farm extension advisors is shown in outline below:

1. Discuss problems at a meeting of local farm discussion group.
2. Select farm families to be assisted.
3. Select volunteer helpers among discussion group members.
4. Conduct work conference of colunteer helpers and low-income farmers. Meeting of the volunteer helpers and farmers may be held separately if the farm advisor thinks it is necessary to do so.
5. Analyze and build a plan with individual farmers. The plan usually includes:
   a. Securing of loan - to lease land or buy necessary requisites, such as straw bag weaving machine, other production equipment, etc.
   b. Provision of farm tools, usually draft animal or power tiller.
   c. Efficient use of fertilizers.
   d. Planting better variety of crop.
   e. Practice better pest control.
   f. Sow raising.
   g. Duck (egg type) raising.
   h. Employment opportunities for family members.
   i. Allocation of "area quota" for mushroom growing.
   j. Family planning (birth control).
6. Assist the farmer to secure a loan and other necessary resources to carry out his work plan.
7. Give constant technical assistance and encouragement to the farmer.

Through Provincial Farmers' Associations, the Provincial Cooperative Bank extends a type of long term loan with relatively low interest to the low-income farmers. Many volunteer helpers act as sponsors of the farmer for getting the loan. Results show that due to the technical assistance and encouragement given by the farm advisors and voluntary helpers, low-income farmers have a higher repayment rate than other farmers. In the past few years, many similar success stories of the program have been told.

Implications

From the foregoing discussion some implications for other developing countries can be drawn:

1. In Taiwan, various extension approaches have been applied to promote the adoption of agricultural and home improvement practices. "Individual contacts by farmers' associations," contacts with "neighbors" and "extension clubs" have been identified as the three most important channels or methods through which adult farmers obtain information. Contact with "neighbors" includes contact with "local leaders."

2. Although individual contacts are effective in promoting the adoption of practices, they require a relatively large amount of worker's time and a high cost. It is therefore desirable to use more group contacts and more local leaders for expanding extension coverage.

3. Mass contact or "mass media method" was not cited as an effective method in Taiwan. One of the main reasons could be that materials used for mass contacts are not appropriate. Simple and more attractive presentations are required. Looking ahead, "mass contacts" are likely to have more importance in disseminating technology as the farmers progress.

4. Extension clubs, such as farm discussion groups, home improvement clubs or 4-H clubs, are important tools in work with farm people. They are effective in promoting the adoption of practices and other group action. It is desirable to organize separate farm discussion groups for farmers of different adopter categories in order to increase the effectiveness of group contact.

5. The utilization of local leaders as an extension procedure is very important. The use of volunteer helpers in the "assistance to low-income farmers program" is an example which other developing countries may adapt to help carry out their own extension work with farm people in low socio-economic status. In Taiwan, there is a need to expand the program to help more low-income farmers.

6. Factors such as social status, size of farm, age of farmers, etc., must be taken into consideration in promoting adoption of improved practices, especially when individual contacts and group contacts are used.

7. To increase extension coverage and the effectiveness of extension approaches in terms of workers' time and to promote the adoption of practices, different extension approaches can be placed on a continuum with individual contact and mass contact at the extreme ends and group contact (extension clubs, etc.) and local leaders in the middle. It seems desirable in the future to make optimum use of extension clubs, local leaders as well as mass contacts.

FOOTNOTES

1. Meredith C. Wilson and Gladys Gallup, Extension Teaching Methods and Other Factors that Influence Adoption of Agricultural and Home Economics Practices. Extension Service Circular 495. U. S. Department of Agriculture. 1955, pp. 69-72.

2. A study published in October, 1964, was conducted.

3. Adopters of New Farm Ideas. North Central Regional Extension Publication No. 13, October, 1961, p. 3.

4. Ibid, p. 4.

BIBLIOGRAPHY

Adopters of New Farm Ideas. North Central Regional Extension Publication No. 13, October, 196.

Chen, Chin-wen, A Preliminary Report on the Effectiveness of Extension Teaching Methods in Taiwan, China (Mimeographed). Taiwan Provincial Farmers' Association, Taichung, Taiwan, 1965.

Hung, George, Assistance to Low-Income Farmers. Sino-American Technical Cooperation Association Review, March, 1966.

Lionberger, H. F., Adoption of New Ideas and Practices. The Iowa State University Press, Ames, Iowa, 1960.

Penders, J. M. A., Rural Extension at the Crossroads. International Agricultural Center, Wageningen, Holland, 1963.

Rogers, E. M., Diffusion of Innovations. The Free Press, New York, 1962.

Sanders, H. C., The Cooperative Extension Service. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1966.

Wilson, M. C. and Gladys Gallup, Extension Teaching Methods. Extension Service Circular 495, U. S. Department of Agriculture, 1955.

Wu, Tsong-Shien, Communication Process and Practice Adoption, Taiwan and U.S.A. M. S. Thesis (Unpublished). University of Wisconsin, 1966.

EXTENSION EDUCATION IN ARGENTINA

Mariano M. Ponce

Argentina is a triangle, elongated from north to south, with high mountains on its western border; the rest is practically flat, draining into the Atlantic Ocean. It includes a subtropical northern, a temperate central, and a cold southern zone. Each is, roughly, one third of the territory.

The most productive area is the central humid area, called the Pampas, originally almost treeless grassland, with the principle urban centers and large and small farms. Because of the differences in climate in the different zones of the country, a great variety of crops and livestock are grown and raised.

INTA

INTA (Instituto Nacional de Tecnologia Agropecuaria - National Institute for Agricultural Technology) is an independent agency of the Federal Secretariat of Agriculture, charged with agricultural extension and research to improve farm enterprises and rural life. INTA consists of 42 experiment stations and the research institutes of the National Agricultural Research Center (located at Castelar, near Buenos Aires).

Extension and research are integrated at the experiment stations. Each station has responsibilities for a certain area, where it works on extension through its extension agencies. A total of 155 are now in operation and about 20 more will be operating in a few months. The experiment stations are grouped into regional centers and these report directly to the Director General.

The Director General is responsible to the six-member Board of Directors. Three of the members represent the farmers (National Farmers Association, federation of local farmers' associations and federation of cooperative associations), one represents the colleges of agriculture and the schools of veterinary medicine of the eight National Universities, and two of them (President and Vice President) represent the Federal Secretariat of Agriculture.

The Board of Directors has the final responsibility for the allocation of INTA's financial resources.

As an independent agency, INTA's main financial resources stem from a 1.5% tax on the monetary value of any agricultural comodity exported.

Farmers and members of the rural communities, such as bank managers and representatives of cooperative associations, make up the Advisory Board of

each experiment station and each of the extension agencies. They also participate in the organization, financing and operation of the new so-called cooperative extension agencies, where the community contributes part of the funding.

Each province has a Provincial Agricultural Technology Board, whose members are representatives of the province, of its farmers and of INTA. They advise on provincial problems and help in coordinating provincial agencies with INTA's resources.

The directors of the experiment stations and the regional centers have ample authority delegated to them: INTA is essentially a decentralized institution.

On the research and extension staffs of INTA there are almost 1,000 university-trained persons, who have the opportunity of continuing their training through study, visits, international meetings and conferences with visiting groups. Many undertake graduate work at the United States, European and Australian universities and at the IIAS (Interamerican Institute of Agricultural Sciences).

INTA assists the IIAS and local universities in giving courses in plant pathology and physiology, genetics and animal pathology.

INTA is fully receptive to cooperation from foreign scientific institutions, foundations, UN Special Fund, FAO, IIAS, USAID, etc. As an example, two projects with the UN Special Fund are now in operation, one on mineral-deficiency diseases of cattle, and another one on feeding and management of beef cattle in Entre Rios. A third project on sheep production in Western Patagonia will start in 1967, and at least three more projects are being negotiated.

Technical Planning and Evaluation

A staff group is responsible to the Director General of INTA for the overall coordination of research and extension at the experiment stations and institute.

For easier handling of coordination, INTA's research and extension action have been broken down into 37 programs. Most of these are centered on an agricultural commodity, or a group of commidities, such as corn, wheat and malting barley, milk production, oil seeds, stone fruits, etc. The rest of the programs are considered auxiliary to the commodity programs: economics (farm management and marketing), genetics, plant pathology, forage plants and pastures, agricultural machinery, etc.

Each program has as coordinator a senior research or extension worker who is responsible for the overall orientation of action within his program in cooperation with other coordinators.

A program is the aggregate of "work plans" which are the smallest units of work with a specific goal at the experiment station, institute or extension agency. Each approved work plan has its own budget assigned, within the total budget of an experiment station or institute. At the end of each fiscal year, annual progress reports for each work plan are prepared, and the coordinator is expected to write a summary report, showing the state of progress of the program.

Department of Specialization

This department is responsible for the advanced training of INTA's personnel or candidates. It handles fellowships and organized training courses for extension and research workers, language courses, and relations with the universities.

Fellowships: Almost 40 young research or extension workers are at present taking graduate degrees, mostly at the M.S. level, some at the Ph.D. level, at U.S.A., European and Australian universities, or are working at foreign laboratories or experiment stations.

Training courses: Methodology for extension agencies, and Rural Home Club and 4-H Club advisors; language courses for fellowship candidates; courses for technicians.

Graduate Courses: These are given by local universities or by the Interamerican Institute for Agricultural Science (IIAS) and lead to an M.S. degree.

Extension Services

I. Objectives

1. To give educational aid to farmers to increase their knowledge and skill for more efficient work for farms and to raise their economic and social level.
2. To promote the development of farm youth organizations for the training of young rural people.
3. To promote a higher living standard of the farm families to achieve a better farm life and to help increase the income of farm families.
4. To promote a sense of community among rural people, particularly a cooperative participation for better welfare.

II. Levels

1. Local services at the extension agencies.
2. Area supervision and coordination at the experiment station.

3. Regional supervision, coordination and research at the regional centers.

4. National orientation and policy making by the Head of the National Extension Service, the National Assistant Director for Extension and the Director General of INTA.

III. Responsibilities

1. The Extension Agency works directly with the rural community, with the aim of increasing the farmers' sense of responsibility and self-confidence; studies the general conditions and special problems of its jurisdiction; orients young people through 4-A clubs (similar to 4-H clubs); assists farmers' wives and the family through the Rural Home Clubs; promotes the creation of farmers' committees and cooperatives.

2. Supervisors at the experiment station participate in the planning of the experiment station's extension program, coordinate action for their area and advise the extension agencies.

3. The Extension Assistants to the directors of the Regional Centers, together with the regional supervisors of 4-A Clubs, Rural Home Clubs and Visual Aids and Information, supervise and coordinate the extension services of the region; select personnel and organize their training; conduct studies and research in extension subjects for the increase of the effectiveness of the work; and coordinate action between the extension services and provincial authorities.

4. At the national level the Central Office has the responsibility for extension policy in the country, and for the coordination of action at the regional centers, similar to the relationships of the U.S. Federal Extension Service with the State Services. The Central Office is in charge of international relations and advises the National Directors about extension problems. It has the responsibility for coordination of training with INTA's Department of Specialization. Together with the staff of the regional centers or experiment stations involved, it takes charge of special types of action.

Training of Extension Personnel in the Cooperative Extension Service

Training of Extension Workers: This is a supporting activity in the Extension Education Process in which the functions of supervisors have a very important place. A primary assertion in Extension Education is that "the success or failure depends on the degree these workers are qualified and trained in some subject-matter areas, that is really what makes an organization work and succeed, and this is much more significant when it is an educational organization. Extension workers in Argentina have opportunities for induction training, in-service training, attendance at conferences and workshops and summer schools.

The Subject-Matter Specialists in the Cooperative Extension Service

It is impossible for extension workers to be up to date in subject matter without any help because they are involved in routine and organizational activities. They cannot keep up in the field of subject matter. Consequently, their efforts in the field must be supported by a team of well-trained and devoted subject-matter specialists.

Responsibilities for Training in the Cooperative Extension Service

1. Extension Director

The extension director assumes major responsibility for providing and maintaining an effective in-service training program for all extension personnel. His specific responsibilities include:

a. Formulating and maintaining a systematic plan of action for the development, training and effective use of manpower resources, including periodic inventory of training needs and progress in meeting these needs.

b. Formulating procedures for coordinating staff efforts in planning and conducting training.

c. Stimulating and encouraging employee development and seeing that special incentives are provided for those who receive training.

d. Seeing that full use is made of existing training facilities and resources throughout the country.

Training of the Extension Personnel in the National Extension Service of the Argentine Republic

Induction training: Induction courses for new personnel are offered in the Regional Pampeano Center, City of Pergamino, Buenos Aires Province. Here they are trained at the Experiment Station by supervisors and specialists in Extension who are working in different areas. The new personnel stay two months in the Experiment Station and one month in different extension offices inside the Regional Center. This means that one part is theoretical and the other is practical. At the end of the period they do the final test or exam, and then go to their assigned places of work. Subject matter is specifically in Extension work because INTA supposes that these trainees do not need for the moment training in technical subject matters.

INTA has at least shown interest in induction training. How about in-service training? That is the problem. After the first technicians who were trained in the U.S. returned to Argentina, they began to organize the training for the rest of the extension personnel. Training included

philosophy of extension, extension methodology, rural sociology, leadership, planning, evaluation, etc. However, they left out technical subject matter. This has made it difficult for new personnel who were going to work in new regions with new or different problems in which they did not have experience or background. It seems logical that an extension worker who knows only extension methodology is not going to succeed if his background, knowledge and skills in the technical subject matter is poor or is not up to date. For example, in Olavarria they need people with knowledge in soils, conservation and management, natural species, weed control, feeds and feeding, management and principles of cattle and sheep sanitation, annual crops and pastures, forages, artificial and permanent pastures according to the type of the soil.

In-service training is not well organized. On the contrary, it is completely disorganized, at least in the Experiment Stations that I know of, as for example Balcarce, Pergamino, Anguil, etc. Each month or every two or three months during the monthly meetings of extension workers, some specialist or research worker conducts one, two or three days of classes or lectures or conferences in subject matter in which the extension personnel have manifested interest. But most of the lectures are not at an adequate level for extension workers. It is very common for them to lose interest in the theme or topic in the middle of the lecture or the course. Because of those motives it is necessary to organize a system or service that can prepare a useful program of in-service training inside the jurisdiction of each experiment station because each region has its own problems according to soil, climate and agriculture and livestock production. Because of the lack of supervisors and specialists, it is not possible to organize adequate programs of in-service training that will include several experiment stations. Besides, it is better to prepare local programs if at all possible in demonstration areas in order to improve the knowledge and skills of extension workers in the most efficient way or manner.

The connection with the universities and faculties of Agriculture and Veterinary is very poor. At present, the situation of the universities is critical, so that cooperation between both institutions does not exist. On the contrary, in many cases there exists a real rivalry between the INTA, national, provincial institutions and the universities. There is also a lack of personnel and research workers inside the universities. Low salaries are a problem, and the professors have work besides their teaching activities in order to earn enough to maintain a good standard of life. In the case of the Experiment Station at Balcarce, the Faculty of Agronomy of the Catholic University of Mar del Plata is available. This faculty, with the help of the University of Michigan (U.S.), is trying to develop an adequate development program. But it is only recently that extension subjects are being taught and the percentage of these courses in comparison with other subject matter is very low. Consequently, the majority of the students have a great tendency to take technical subject matter and there is not enough motivation to turn the attention of the students to extension education. It is also easier for them to continue working in research than to go to the field and begin to work with rural families. For the moment, the new

professional people who have graduated in this university are but few, and we know we need a lot of very well-prepared extension workers to solve our problems in extension. We do not have the prestige of any university in our Extension National Service, but we are trying to bring to it the level and prestige of the INTA.

Another institution of training is the Department of Specialization in Castelar within the National Center of Agriculture and Livestock Research. The institution selects extension workers, extensionists, chief of agencies, home economists and 4-A advicers from different regional centers, and gives them courses in extension methodology, administration, audio-visual aids, lasting from four to six months. The students are heterogeneous, which makes training difficult, but the most important drawback is that each extension worker must leave his home and agency for several months and undergo training far away from his local environment, live in an uncomfortable manner and receive only half of the finances or provision needed for the training period.

Another deficiency of the training process is the lack of group techniques. Sometimes a symposium is conducted once a year or once in two years. Methods like the small group discussion, the buzz group, the symposium, the panel discussion, the interrogator panel, the committee hearing, the dialogue, the interview, the brainstorming, the role playing, workshops, tours and field trips in combination with demonstration methods are not used. At one time an organization known as CAFADE conducted a very interesting training course in 1961, but after that a change of government took place and CAFADE was abolished.

BIBLIOGRAPHY

Beal, Bohlen and Raudabaugh: Leadership and Dynamic Group Action - The Iowa State University Press - 1963.

Chang, C.W., Extension Education for Agricultural and Rural Development. Bangkok, Thailand, 1963 - FAO.

Induction Training for County Extension Agents - Recommendations of The National Task Force on Coop. Extension In-service Training.

An Inservice Training Program for Cooperative Extension Personnel - Recommendations of the National Task Force on Cooperative Extension Inservice Training.

Kearl, B. E. and Copeland, O. B. (Ed.), A Guide to Extension Programs for the Future - Agricultural Extension Service - North Carolina State College, 1959.

Kelsey, L.D. and Hearne, C. Ch., Cooperative Extension Work. Comstock Publishing Associates, Ithaca, New York, 1963.

Ross, M. G. and Hendry, C. E., New Understanding of Leadership. Association Press, New York, 1966.

Sanders, H. C. (ed.), The Cooperative Extension Service. Louisiana State University and A.M. College, Prentice Hall, Inc., 1966.

Wilson, M. C. and Gallup, G., Extension Teaching Methods. Federal Extension Service, USDA, Circular 495, 1954.

Lectures: 1. Leadership in Community Programs - Professor W. T. Bjoraker

2. Extension Education in Developing Countries - Professor M. Douglah

3. Extension and Education Comparative Seminar - Professor J. A. Duncan

THE PROGRAM PLANNING PROCESS IN THE UNITED STATES WITH IMPLICATIONS TO MALAYSIA AND SUDAN

Ch'ng How Soo and Suliman Adam Belo

Introduction

As Extension employees, we do not question the necessity and value of careful planning for a meeting, a speech or a result demonstration. We know such planning will make us more effective. There is thus no reason why we should question what we called program planning.

There is general agreement over the value of planning. The dispute behind it is how planning is done. Properly carried out, it will help us achieve our objectives as professionals. In this connection, V. L. Pellett says[1]:

> "If planning is purposefully done and the resulting plan is followed, the time spent on planning can be the most fruitful time spent in conducting a successful Extension program. It can save much more time than that which may have been wasted in 'spinning our wheels' in carrying out the program."

The Extension Division of the Malaysia Department of Agriculture has a major role to play in the country's massive rural development projects. The success of these projects depend in large measure upon how they are planned. The young Extension Service in Malaysia has much to learn from a careful study of what the Cooperative Extension Service in the United States has been developing in terms of program development over the past half century.

The purpose of this paper is to obtain some practical and useful ideas for the sound development of Extension programs. The treatment of the subject will be attempted in the following manner:

(a) Background Statement - the present programming situation in Malaysia.
(b) Program Development in the United States.
(c) Implications and Recommendations for Improvement on the Existing Situation.

Background Statement

Malaysia is basically an agricultural country. About 65 percent of the ten million acres of agriculturally useful land has been opened up. Today 44 percent of its gross domestic product is from agriculture.

It has a population of about 7.8 million, 70 percent living in the rural areas most of whom are illiterate. Over 50 percent of the population are engaged in subsistence farming.

The Department of Agriculture, Malaya, was established in 1948. It provides the main source of advice and information to the farmers and planters (the latter are big rubber land owners possessing usually more than 1,000 acres of the crop) in methods and techniques of agricultural production. The main function of the Department has been to do research and conduct experiments, the results of which are disseminated to the public through its Field or Extension Division. However, the manner of passing knowledge to the people is not done via the educational approach. The Department as a whole functions more like a service, regulatory and supply agency rather than educational, which it should be.

The Present Programming Situation

The officers of the Department of Agriculture at the national, state and provincial levels hold degress in science, while those at the District level possess diplomas of agricultural science and at the local or village level extension personnel have certificates from the School of Agriculture. All these staff members are trained solely in the technical subject matter areas of agricultural production. At the present time, only two members, who had just completed their graduate training in the United States, are qualified or have trainings in Extension Education. Such being the case, the whole concept of program planning process, with its inherent philosophies, objectives, procedures and principles, can be said to be unknown to members of the department. Consequently, planning of programs are thus centrally carried out without the involvement even of the intermediary staff, let alone the local citizen.

In 1957, Malaysia gained her independence. As it is almost universal in this generation, following political independence the nation's next goal is economic independence. The country wants to be self-sufficient, to improve its living standards and educational opportunities. Economic strength and social prestige thus become the nation's present targets.

To achieve these goals, the Malaysian National Government is establishing and administering gigantic public programs including those of Extension and Community Developments through the Rural Development Programs. Production targets which local people are to accept and try to implement are set up by central administration and it becomes the main functions of Extension to see that these targets thus set up are achieved.

Some of the major plans include the Rice Seed Distribution Scheme, Rice Fertilizer Subsidy Program, Fruit Rehabilitation and Coconut Replanting Schemes and others. These programs are supposed to improve the productivity of the crops in the farmer's land.

Community development projects centered around the provision of amenities such as roads, bridges, electricity, water supply, clinics, pray houses and community halls. While these developments are of paramount importance to development of the country and the people, physical uplift without education of the people will not bring about desirable changes. This is the only country to the knowledge of the author that builds prayer houses for the people when resources could be used for other more important and essential development.

Programs are formulated by the top federal and state administrators with the nation's aim of economic independence and social prestige. They are based mainly on the experiences of the administrators and what they perceive to be most beneficial to the people. The intermediary staffs, the extension workers in direct contact with the people and the local clientele are not involved in the planning process. We can thus say that under the present setting of the Malaysian Extension Service, programs are all pre-determined. They are then passed down and the jobs of the local extension staff are to execute them and bring about effective results.

Based on the author's six years extension experience, it is doubtful that these programs do really benefit to the people. Even if they do, the number of farmers who really understand and learn the benefit of these programs is very limited. Because of the non-involvement of the staffs in planning, even they are not sure of what they are expected to do. This includes the policy, procedures and the implications of these programs. Sometimes confusion arises in the execution of programs. An example is in the Fruit Rehabilitation Scheme. Local staffs in some areas are not able to decide which types of land holdings are really eligible for subsidy because there is no clear definition or specification for determination of the types of property that are eligible for such aid. Confusion also arises in the determination of the type of materials to be supplied once a holding has been approved for rehabilitation aid. Such problems were not foreseen because analysis of the actual situation was not carried out prior to actual planning.

The present situation in Malaysia is not that there is scarcity of programs, finance or materials, but rather the wrong way of approach. The Department of Agriculture is not the only department having programs of this nature. The Veterinary and Irrigation Departments, the rubber industry, the Rural Industry Development Authority and others all have programs aimed at the development of the same farmers yet each going on his own way without any coordination of efforts. It is the author's belief that it is not the number of programs we have for the people that is really important. There may be hundreds of programs, but if they are not systematically and collectively planned, coordinated and consistent with the needs of the people, their effective implementation is opened to doubt.

Program Development in the United States

The United States' approach to program planning is to develop educational programs aimed at bringing about social change in the clientele - a change that would affect their skills, knowledge, attitudes, culture and economic well being. The people are helped to help themselves so that they become competent in solving their own problems and hence developed into useful and responsible citizens of the nation. Boyle[2] says:

> "The fundamental philosophy of the Cooperative Extension Service is that active participation by the people in program development is essential for the effective planning of educational programs. Through this approach that Extension Service has achieved an enviable record by constantly providing the people with educational opportunities which have contributed to resolving problems pertinent to their economic and social well being."

Robert Clark[3] says:

> "The fundamental purpose of the Cooperative Extension - in fact the only reason for its existence - is the development of an educational program with the people who we are privileged to serve. Whether the service thrives, just exists or withers on the vine will be determined by its programs."

Historical Development of Extension Program Planning

The program planning process currently adopted by the United States Cooperative Extension Service has evolved after being through various stages over a period of time.

(a) Pre-determined stage - In 1914 when the Smith-Lever Act was adopted, programs were staff centered. They were formulated largely by the service itself and immediately put into action. The main responsibility of the service was the dissemination of information to the farmers through demonstrations. The people were not yet equipped to contribute to the plan. Thus, the early Extension programming function was predetermined and execution-oriented.

(b) Self-Determined stage - In the 1920's programs were opinion centered. Pressure came from the farm organizations which desired that their opinions be included in the programs - thus their wants and needs were being met by programs through the expressions that they made.

(c) Fact Determined Programs - The late 1920's and early 1930's mark the era of fact-determined programs. Facts pertaining to trends in production, consumer demand, needs of youth, the family and farm business, as well as differing perspectives of the urban-industrial segment were important factors in guiding local people and extension personnel in planning and executing extension programs.

(d) Government Centered Programs - During the great depression of the 1930's the government was forced to be the sole administrator of the programs.

(e) War Emergency - During 1941-45, the government again took full power over programs because of the emergency.

(f) Prople Centered Programs - During 1945-55 community and commodity groups were involved in planning. In 1955, the program-projection approach to programming was introduced by the extension committee on organization and policy. After 1961, the emphasis is on total resource development which calls for a concerted and cooperative effort by all agencies, organizations, and individuals. Today, therefore, programming emphasis is on the identification of problems and opportunities by extension workers and local participants that must be based on scientific and technical facts and trends to be obtained from research, surveys, public documents and other relevant sources.

Principles of Extension Program Planning

The term "principles" as used here is synonymous with "guidelines." Such principles or guidelines in terms of extension program planning, for the most part reflect the philosophy of extension education in this country.

In the brief review of the historical evolution of extension programming it can be seen that the Cooperative Extension Service has undergone several stages of "development" to reach what it stands for today.

Therefore, it is important to understand some principles of extension program planning formulated and discussed by extension educators which have implications and are meaningful today.

Principles are basic, giving meaning to procedures. They should determine what and why procedures are used. Vandeberg[4] points out that one does not start planning with a given set of procedures but principles. The planning process to be followed should be developed that the conditions set forth in each of the principles are brought into being. The development of a sound plan thus is insured.

Boyle[5], in an analysis of selected program planning principles, selected eleven principles each related with ten to fifteen references covering many years of Extension and adult education efforts in the fields of agricultural education, psychology and rural sociology. There was common agreement and acceptance as to the importance of these basic principles:

1. The overall objectives of the agency are considered in the planning.
2. Educational needs of the potential program participants are considered in the planning.
3. Interests of the entire community are considered in the planning.
4. A wide range of resources are given consideration in the planning.
5. The planning group includes local citizens who are potential participants in the program.
6. Democratic processes are used whenever possible in the planning.
7. Various methods which might be used in reaching the objectives are explored in the planning.

8. The program planning process is continuous.
9. The program planning process is flexible.
10. Provisions are made for appraisal and for evaluation of the program in planning.
11. The planning group coordinates its activities with those of other adult educational agencies.

Kelsey and Hearne[6] outline ten principles of Extension program building, and point out that they are dealing not with procedures, but rather the elements essential to sound procedures. It follows that sound Extension program planning:

1. Is based on analysis of the facts and trends of the situation.
2. Selects problems based on needs.
3. Determines objectives and solutions which offer satisfaction.
4. Has permanence with flexibility.
5. Has balance with emphasis.
6. Has a definite plan of work.
7. Is a continuous process.
8. Is a teaching process.
9. Is a coordinating process.
10. Provides for evaluation of results.

According to Vandeberg[7], the following applied principles were developed and utilized in the process of developing the overall county Extension program plan. These were adaptations of principles found in the literature of education, psychology, sociology and through many research projects in counties in Wisconsin and other states. The emphasis here is in relation to the county planning committee:

"1. Coordination and efficiency of program planning efforts are enhanced when all members of the county staff have common insight into the process and common agreement on objectives, procedures, and responsibilities in the planning process.

2. County program planning efforts are enhanced when the county governing board --- understands and approves the process to be followed and its purposes and is involved in the process from the beginning.

3. The effectiveness of the program planning committee is enhanced when favorable attitudes toward the whole process are presented among county representatives of related agencies and their knowledge and suggestions are involved throughout the planning process.

4. The acceptance and effectiveness of the efforts of the planning committee are enhanced when the planning process there is intensive involvement of local people who can represent the people of the county along with the county staff and selected resource people.

5. The quality and quantity of contributions from planning committee members increase when special orientation is provided them and provisions are made for various members to probe, study, and analyze specific program areas.

6. The effectiveness of the planning committee in developing an appropriate program plan is enhanced when needs and interests of the people are identified, applicable scientific, social and cultural facts are involved, and the available resources are considered.

7. The effectiveness of the planning committee is enhanced when its efforts result in a written plan which includes specific recommendations; when, for each recommendation, one or more organization, agency, government unit, or institution is identified which should undertake the action; when the plan is made known to professional and local leaders in the county; and when those to whom recommendations are directed are informed that they will be invited to provide a progress report to the committee periodically."

What is the Program Planning Process?

Program. By definition, program means the schedule of actions or tasks that is being planned.

Gale Vandeberg[8] refers to programs as ". . . that which is taking place by or through the Extension personnel . . . thus the Extension program in a county is that which takes place by or through the leadership of the staff."

Planning. A plan is a predetermined course of actions which must have these characteristics; (1) it must involve the future, (2) it must involve action, (3) there is an element of personnel and organization.[9]

Planning is the act or process of making a plan - which is a program or a schedule. According to Vandeberg[10], the primary purpose of any planning is that of developing a sound, defensible and progressive course of action.

The Program Planning Process

Boyle[11] refers to the process as:

"Program planning is. . . a process through which representatives of the people are intensively involved with Extension personnel and other professional people in four activities:

1. Studying facts and trends;
2. Identifying problems and opportunities based on these facts and trends;
3. Making decisions about problems and opportunities that should be given priority; and,
4. Establishing objectives or recommendations for future economic and social development of a community through educational programs."

Kelsey and Hearne[12] describe the process as:

"... a process (in which) facts concerning the situation are collected and analyzed, unsatisfactory elements are identified, desired objectives or improvements are determined, and stated, and alternate ways of reaching the objectives are considered."

The Extension Program Development adopted at the county level generally would follow five reasonable distinct stages, according to Raudabaugh[13]:

1. Identification of the problem
2. Determination of the objectives.
3. Development of a plan of work.
4. Follow through on the plan of work established.
5. Determination of progress.

An ideal process for Extension planning on a long-term basis at the county level as described by Boyle[14], consists of five phases:

1. Formulation of a broad organizational philosophy, objectives, policies, and procedures for program planning in the state.

2. The identification and clarification of a need and preparation for planning county programs.

3. The organization and maintenance of a county planning group.

4. The reaching of decisions on the problems, concerns and opportunities.

5. The preparation of a written program document.

Responsibilities of the Extension Personnels in County Program Planning

The role of Extension personnel in program planning is best described by Sirleaf[15]:

"One of the primary educational responsibilities of Extension workers is to provide leadership for a county, state or Federal wide Extension program that is to be planned and implemented, keeping constantly in mind that this process is in conformity with the general objectives and philosophy of agricultural Extension service."

"Leadership" in this sense refers to the working with the group of people in the community helping them to realize their own problems. This is best described by Haiman[16], who says:

"Group leadership is not simply a matter of promoting healthy interpersonal relationship and encouraging scientific procedures. . . In group situations we must coordinate our own thoughts with those of others, many of whom think at different speeds, different levels

and different ways. Some people grasp ideas quickly, whereas others are slow to assimilate new thoughts. . . One of the big problems of leadership is to pull these divergent types together and coordinate them into a thinking system."

Quinn and Boone[17], point out that besides being well versed with the principles and processes of programming and having a high degree of proficiency in applying these concepts - the task of extension workers is that of seeking out pertinent facts, situations and trends and synthesizing them into an educational program aimed at meeting the changing complex needs of the people and in such a manner as to make maximum contribution to society.

Kelsey and Hearne[18] give a more precise statement on the roles of the Extension personnel in program planning. He says:

"The director and his representatives such as the supervisors, field agents, specialists and county workers all have the following roles to perform each in his own way in connection with program building.

1. To assemble, relate and analyze facts.
2. To help determine objectives.
3. To study wants and needs of the people, determining basic problems affecting the communities, other areas and special interest.
4. To decide upon practical solutions to problems or answers to wants and needs.
5. To help decide which problems need immediate attention.
6. To develop complete procedures and train staffs.
7. To teach and strive for higher participation by the people.
8. To coordinate all efforts and resources, other agencies and groups.
9. To evaluate results as an aid in future program building.
10. To publish and distribute programs."

Implications of the Program Planning Process In the United States for the Malaysian Agricultural Extension Service

The above review of the systems of program development in the United States and Malaysia reveals that the young Malaysian Extension Service worker has much to gain from the more superior process of program planning currently adopted by the Cooperative Extension Service of the United States which has been developing over half of a century. Numerous implications and beneficial ideas could be derived, but this does not mean the introduction of what is being pursued in the United States in almost the same form. Adaptation of the relevant features to fit the particular Malaysian setting is essential. Some of the more basic implications and recommendations would include:

1. The method of approach to contribute to improvement of the total welfare of the extension clientele should be through <u>educational means</u>. Such educational activities should aim at helping the people to help themselves in recognizing and solving their problems, in attaining economic security, opportunity for adequate and satisfying expression of human personality and in understanding their proper role in society. People do not change or are not helped to achieve an improved total well being by just being provided with services and facilities when required, as is at present being practiced and emphasized in Malaysia. Materials can be provided in abundance, but if the people do not understand their significance, do not know how to make use and appreciate their values, they will not improve - physical uplife without education does not necessarily mean behavioral uplift. The Malaysian Extension Service within the Department of Agriculture therefore has to reexamine its objectives and the methods of planning the present programs. The basic job of the Extension Service therefore should be educational.

2. The success of an educational program depends largely upon the degree of acceptance by those who are to be involved in it. This will be particularly so in Extension work where participation in its program is wholly voluntary, and the people participate only because of the value they expect to receive. Programs for agricultural and extension development are therefore more effective when the local people are involved in their development, whereby they themselves identify their needs and interests and decide on the programs' contents that are to be made available to them. After all, they should have a say in matters that are going to affect them. The philosophy of the Malaysian Extension Service should also be to develop programs with and not for its clientele.

3. Programs should be developed at all levels. It should be done at the national, state and district levels. However, the district should be the focus for the development of Extension programs. These programs are to be developed by the local people and the district agricultural assistants working together with the latter providing the leadership. It is at this level that the Extension staff are in direct communication with the people. Matters pertaining to the farmers' problems, their needs and interests could be more readily and realistically identified at this level.

The state programs need to be based on those submitted from the districts. Similarly, national plans embracing the whole country need to have bearings on both the state and local level programs. This will facilitate a better understanding and insure the suitability of programs meant for implementation in the districts.

The national level should be more involved in formulating policies and procedures for planning of programs in order to streamline and coordinate the process throughout the country. The function of the federal and state extension service is not to determine local program but to help the district staff develop programs; making it as easy as possible for the local staff to do their job properly and effectively.

4. The common excuse that rural people, including farmers, are illiterate and are unable to make sound decisions for themselves is no longer valid. If Extension were to wait until such time when these people are fully literate, then there will never be any start toward development. Government officials have to recognize that these people, despite their illiteracy, have considerable wisdom of their own. With proper training and appropriate guidance these people are capable of identifying their needs and developing sound programs. If Extension provides adequate training and direction, lay leaders will not only share responsibility in developing sound programs, but also in initiating, executing and evaluating them.

5. Following from here, it would mean that the Extension personnel have to play a greater role than at present. The training and guiding of the local people to participate in program development becomes their responsibility. This further means that Extension personnel must understand and be competent in the program planning process. All personnel directly or indirectly involved in program planning must undergo training in this area. Since they are dealing directly with the people, their additional training would also cover the social sciences. These qualifications are basic.

Program planning specialists need to be appointed at the national level to undertake the training of these personnel as well as to supervise future programming processes.

6. Program planning based on planning processes developed in the United States would also imply involvement in total resource development. The Malaysian Extension Service now mainly concentrating on agricultural development would have to change its objectives to encompass other related areas connected with family living and community well being. Its scope should be expanded to include home economics, youth development, leadership development and public policies. This would need not only be an increase in competency of the staff, but also an expanded staff establishment.

7. Planning at the local level would also mean a greater cooperation and coordination of the agencies which have similar objectives. The irrigation and drainage, veterinary and cooperative departments, the rubber industry and the rural industries authority should all exist as an integral unit, because they are all working with the same clientele and their fields are very much interrelated. At present these departments function independently with the minimum of coordination of their efforts. Following the United States model of program development would mean a closer link of these departments and thus enhance a more concerted and fruitful work.

Summary and Conclusion

The program planning process adopted in the Unites States involves an intricate network of phases and conditions with inherent philosophies, principles, objectives and procedures. All these must be taken into consideration before embarking on program development. The experiences in the United States indicate that development of the people must be through educational programs which aim at helping the people to help

themselves in solving their own problems. People participation is inherent in the development of these programs, which should be based on their needs and interests and should provide them satisfaction. The philosophy of Extension is to develop programs with, and not for, its clientele.

The young Malaysian Extension Service has much to gain from the experience in the United States. This does not, however, mean copying exactly what is being done in the United States. The program planning process needs to be adopted gradually. Through its adoption, philosophies, policies and procedures need to be developed to fit the particular Malaysian setting. These would provide direction and insure that planning of programs are systematic and based on sound principles.

Decentralization and delegation of authority from federal level to state and to local communities is necessary for democratic agricultural development and this social change is accelerated when local program planning is encouraged.

Case Example of Program Planning in the Sudan

This is a brief comparison of Sudan's Extension program planning process with a model example where extension is fully developed. The comparison expresses the process that could only be done under the present economical, social and educational systems of the country. Also whenever I speak of the process, I am referring particularly to one region, Equatoria Province, the first established extension unit in the Sudan.

Essentials of Program Development

A. Program planning process should involve local people. The most successful program is the one in which approaches are jointly reached between local people and professional extension staff. Local people will feel that this is their program which indicates that they have a voice in policy making of their region. More important is that action is likely to result when objectives are jointly made.

However, in a country with over 80 percent illiteracy, it is a real problem to have a joint program planning process involving local people. People in certain regions of the Sudan, especially Equatoria, may not even be aware of their needs and problems. Joint program planning is limited to a certain extent to areas where awareness and/or education exist. The program is more or less centrally planned.

The different regions are treated according to their needs and within the context of the Ten-Year's Development Plan for the whole country. Planned programs may be subject to modification by the local extension staff and their committees, but any modification should be reported either in the monthly or the annual report to the Extension and Education Division of the Department of Agriculture.

B. Programs should grow out of recognized needs and problems. Based upon analysis of facts gathered from each region's survey, program planning should decide upon the important needs, problems and objectives. Identification of problems and needs should be by the people assisted by extension staff. Therefore, it must reflect the needs and interests of people involved.

When extension was introduced in 1958 to the Sudan, the majority of the inhabitants in Equatoria still lived in the stone age. They were under colonial rule from the external world and isolated from much of the culture of their own country for fifty years. They were not even aware of some of their needs and problems. It was impossible to have a joint committee for planning. Only a few people, such as chiefs and enlightened farmers, were involved in the process.

C. Programs should make use of lay leaders. Their role is of prime importance, especially in underdeveloped countries. They are the key to their locked communities. Extension has to make use of them as much as possible. They help extension to achieve certain things that are impossible without their help.

Chiefs, prominent farmers, rainmakers and many others are properly utilized by extension staff in Equatoria. Demonstration plots of vegetables were established on the chiefs' farms. It was an effective way to introduce new vegetables that would have been impossible to introduce by other means.

Procedure of Planning

Planning can be done or carried out through certain steps. These are:

A. Formulating broad organizational philosophy, objectives and policies. Any successful extension service must have a good philosophy of planning. It should provide training for staff and local leaders to create a proper environment for planning.

In the Sudan, objectives, goals and philosophies are well defined and according to the various regional needs. Staff training is carried out and varies from one province to another. Local leaders and key people are also involved in the training.

B. Developing a need for planning among extension personnel and local people. Extension agents must make efforts to create awareness of the importance of program planning, and they should be of service to the leaders of the community and should be helpful in developing the need for planning.

C. Developing an organizational structure.

1. After implanting the idea of planning, the following points should be considered:

a. Agencies and organizations involved.
b. Orientation provided to the participants.
c. People intended
d. Committees

2. Situation in the Sudan (organizational structure) in Equatoria.

a. Agencies, organizations and groups involved are:

1) Relevant departments such as Forestry Department, Health Office, Medical Officer, Veterinary Department, Mechanical Transportation Division, Inspector of Local Government, etc.

2) Extension agent and senior inspector of Agriculture.

3) Chiefs and subchiefs

4) Prominent farmers and businessmen

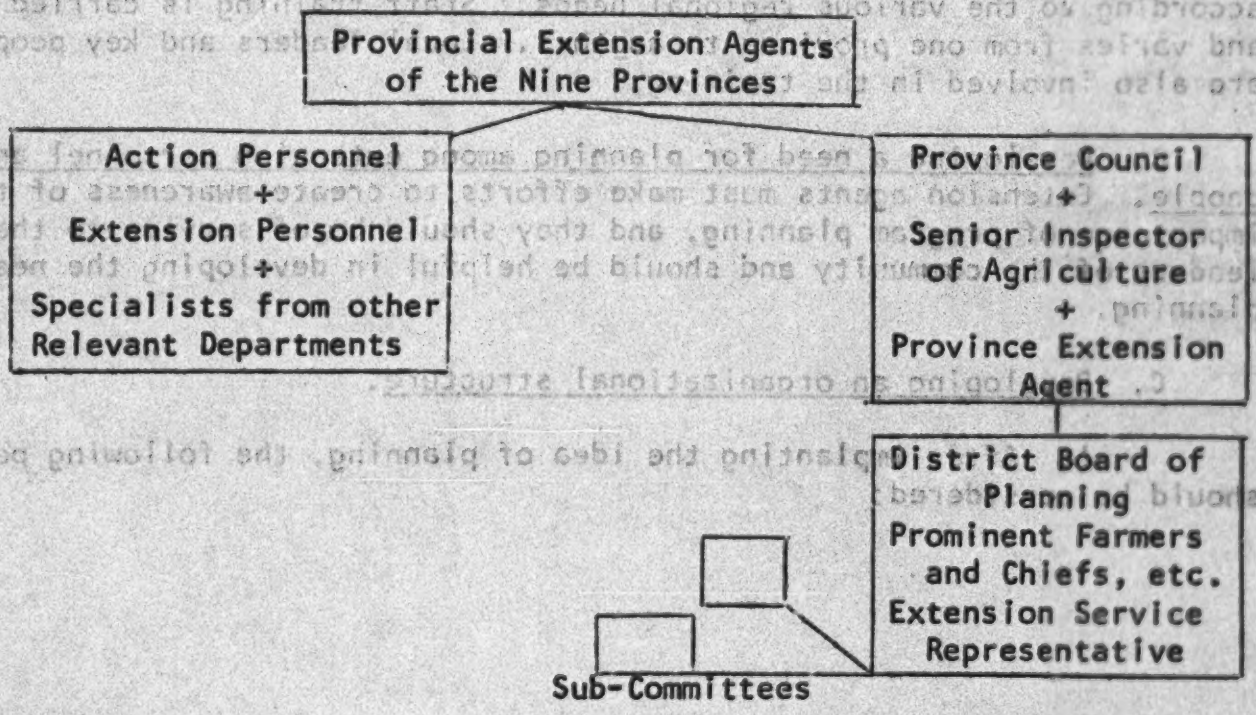
5) Religious groups and teachers

6) Minority groups.

b. Orientation provided: The minority groups, teachers, religious groups and the relevant departments are aware of what is going on in the region, what is needed and what the problems are, but how to solve problems, etc., is usually told by extensionists.

c. People intended: The community (rural) at large.

d. Committees are organized more or less in a chronological manner to five levels as seen in the following organizational chart.


Provincial Extension Agents of the Nine Provinces
Action Personnel + Extension Personnel + Specialists from other Relevant Departments
Province Council + Senior Inspector of Agriculture + Province Extension Agent
District Board of Planning Prominent Farmers and Chiefs, etc. Extension Service Representative
Sub-Committees

D. Gather and evaluate facts that are based upon community welfare.

1. Information about crops grown or can be grown in the area.
2. Soils and their capabilities, problems, etc.
3. Pests and diseases.
4. Water supplies, irrigation facilities, etc.
5. Health, sanitation, etc.
6. Education and social systems, etc.
7. Economics of the area.
8. Attitudes, beliefs, etc.
9. Credit, etc.

Situation in the Sudan: A thorough survey was carried out by Extension staff on the west bank of Equatoria, as well as in other parts of the country. Some information about many areas was already compiled in relevant departments in Equatoria. Some was directly applied after evaluation. Some was incomplete and had to have more information gathered. A new survey was made for areas that had no available information. After a good survey had been conducted, all information was sent to the head office of the extension service in the capitol for further action.

E. Meetings with local committee representatives to determine program content.

1. Present information on background data.
2. Needs and problems to be defined, based on the survey information.
3. Local and central (national) help, funds, etc., should be well specified to utilize local resources of the region.
4. Establish priorities.
5. Define the objectives.
6. Determine all possible solutions.
7. Recommendations.

Local people in the Sudan (Equatoria) are only involved to a limited extent where education and/or awareness exist. It is more or less a centralized type system with some modification to suit the local situation.

All steps from 1 to 7 above are recognized in central planning, and priorities are given to the urgent problems within the context of the Ten-Year's Plan for the whole country.

IV. Conclusion (in points)

A. To conclude, program planning in the Sudan is more or less centrally planned in the national Extension Service office in the capitol for the whole country.
B. Planning is based upon the needs of each region and only within the context of the Ten-Year's Developing Plan of the country.
C. Local extension agents are authorized to modify the plan, but again within the framework of the central plan.
D. Local leaders are involved in the replanning whenever education and/or awareness permit.

Bibliography

1. Boyle, Patrick G., Program Planning Process with Emphasis on Extension, National Agricultural Training Center for Advance Study, University of Wisconsin, 1965.

2. Boyle, Patrick G., "An Analysis of Selected Program Planning Principles of the Adult Programs of Vocational Agricultural and Cooperative Extension," Unpublished Ph.D. Thesis, University of Wisconsin, 1958.

3. Haiman, Franklin S., "Group Leadership and Democratic Action," H. Mifflin Company, Cambridge, Massachusetts, 1957.

4. Kelsey, L.D. and Hearne, C. C., Cooperative Extension Work, Comstock Publishing Associates, Ithaca, New York, 1963.

5. Le-Breton, Preston P. and others, Planning Theory, Englewood Cliffs, New Jersey, 1961.

6. Malaysian Agricultural Journal, Ministry of Agriculture and Cooperatives, Kuala Lumpur, Vol. 45, No. 1, 1965.

7. Quinn, E. H. and Boone, E. J., "Raising on Professional Sights in Extension," Adult Education, Autumn, Vol. XV, No. 1, 1964.

8. Raudabaugh, J. N., Evaluation in Extension, (ed.) Darcie Byrn, H. M. Ives and Sons, Inc., Topeka, Kansas, 1959.

9. Sirleaf, James A., "Program Planning Process of the Cooperative Extension Service as May be Adopted by Liberia, Unpublished M.S. Thesis, University of Wisconsin, 1964.

10. Sanders, H. C. and others, (ed.) The Cooperative Extension Service, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1966.

11. Vandeberg, G. L., "Guidelines to Planning," Journal of Cooperative Extension, Vol. III, No. 2.

12. Wang, In Kuen, "The Role of County Advisory Committees in Program Planning with Implications for Extension Work in the Republic of Korea," Unpublished M.S. Thesis, University of Wisconsin, 1960.

13. Noah, Salah E. Suggested Program for Agricultural Extension in the Sudan. Thesis.

14. Noah, Salah E. Analysis of the Role of Meridi Extension Unit. Thesis

15. Hassan, Romona R. A Suggested Program for Agriculture Extension Education in Zande District (Sudan).

Lectures: Extension and Education Seminar 580 - Prof. James Duncan
Extension in Developing Countries - Prof. M. Douglah

Text: The Program Planning Process - P. G. Boyle
Seminar Proceedings National Extension Seminar - Sudan, April 25 - May 1, 1964.

Footnotes

1. V. L. Pellett, Journal of Cooperative Extension, Vol. III, No. 4, p. 228.

2. Patrick G. Boyle, Program Planning Process with Emphasis on Extension, National Agricultural Center for Advanced Study, University of Wisconsin, Madison, 1965, p. 10.

3. Robert C. Clark, Purpose of the Conference, A Research Approach to Program Development in Cooperative Extension, National Agricultural Center for Advanced Study, Univ. of Wis., Madison, 1962, p. 5.

4. Gale L. Vandeberg, "Guidelines to Planning," Journal of Cooperative Extension, Vol. III, No. 2, p. 80.

5. Patrick G. Boyle, "An Analysis of Selected Program Planning Principles of the Adult Programs of Vocational Agriculture and Cooperative Extension," Unpublished Ph.D. Thesis, University of Wisconsin, 1958.

6. Kelsey and Hearne, Cooperative Extension Work, New York, Comstock Publishing Co., 1963, p. 145.

7. Gale L. Vandeberg, Ibid, pp. 79-85.

8. Gale L. Vandeberg, Ibid., p. 77.

9. Le-Breton and Henning, Planning Theory, Prentice Hall, New Jersey, 1961, p. 7.

10. Gale L. Vandeberg, Ibid., p. 79.

11. Patrick Boyle, Op. cit., p. 12.

12. Kelsey and Hearne, Op. cit. p. 142.

13. J. N. Raudabaugh, "Evaluation in Extension Education," F. P. Frutchey and others, Evaluation in Extension, H. M. Ives and Sons, Inc., Topeka, Kansas, pp. 7-9.

14. Patrick G. Boyle, Op. cit., pp. 17-52.

15. Sirleaf, D. J. A., "Program Planning Process of the Cooperative Extension Service as may be adopted by Liberia," M.S. Thesis, University of Wisconsin, 1964, p. 48.

16. Haiman, Franklin S., Group Leadership and Democratic Action, M. Mufflin Company, Cambridge, Massachusetts, 1957, pp. 166.

17. Quinn, E. H. and Boone, E. J., "Raising Professional Sights in Extension," Adult Education, Autumn, 1964, Vol. XV, No. 1, p. 30.

18. Kelsey and Hearne, Op. cit., p. 161.

RECRUITMENT AND TRAINING OF VILLAGE-LEVEL EXTENSION WORKERS IN THE SUDAN

Yassin A. El-Omari

The significance of training in the professional preparation of extension workers cannot be over-emphasized. As the state extension director said, "The rise and fall of Cooperative Extension will be in direct ratio to thetraining of its personnel."[1] Recruitment is also considered by many as a determinant of the success of extension service. J.D. Prewett[2], associate director of the Texas Extension Service, said in this connection that:

> "Extension's capital stock and investment is carried in its personnel. The degree of progress we make as an extension service depends on the recruitment and training of new workers who come into the organization."

As a young establishment, the Extension Service in the Sudan is faced with the problems of recruitment and training of extension workers at all levels - national, provincial, district as well as village-level workers.

The purpose of this paper is to deal with the problems encountered in recruitment and training of village-level extension workers. The treatment of the subject will be attempted in the following manner:

1. Background statement
2. Problems of recruitment
3. Problems of training
4. Implications and recommendations to improve on the existing situation

1. Background Statement

The Extension Service in the Sudan was established in 1958 as a unit within the Ministry of Agriculture. It was in no way related to the College of Agriculture, which has not undertaken the training of extension workers as one of its functions. This represents a weakness which is too obvious to elaborate upon. Concurrently with the establishment of the extension service, an Agricultural Institute was established and extension education subject matter was provided in its curriculum. One major weakness in this connection is also lack of direct relationship between this institute and the extension service as might have been expected. However, the graduates are employed as village-level workers as well as sub-district and district-level workers.

The very few persons who had graduate and post graduate training in extension in the United States are now working on the national and provincial level. The flow of these graduates from the United States is

steady and with the establishment of Extension Education Department within the College of Agriculture in the neat future (more likely by 1969) more will be available to work at the provincial and district level. It is therefore felt that recruitment and training of village level extension workers represents an immediate need which has to be satisfied especially atthis early stage of development of the extension service. The success and effectiveness of the newly established extension service will depend largely on the fulfillment of this need. Both induction and in-service training will be dealt with in this presentation.

Identifying the problems of recruitment and training is the initial stage in solving the problem outlined above.

2. Problems of Recruitment Identified

A. As with all other jobs, recruitment of the "right" person is recognized as the leading problem. Dewan[3] noted that if wastage is to be avoided, those recruited should have "a sense of dedication to rural service, intellectual and emotional maturity and capacity to go deep into the problems of rural areas." Working in rural areas in the Sudan is a challenge to workers. They are expected to work in adverse conditions exemplified by inadequate or even lack of proper transportation facilities, lack of electricity and running water, lack of recreation and other facilities. For these reasons people are usually reluctant to work in rural areas - and only those who do not find jobs in cities and towns are available or willing to serve in the rural areas.

B. The future and career of village-level extension workers is not yet fully defined or outlined and this represents another area of difficulty because people are not willing to "venture" into jobs not offering definite rewards in the form of salaries and job security.

C. Beside working in adverse conditions, the extension worker is also expected to be available for consultation and visits by his clientele during his leisure as well as during working hours. This tends to keep many from joining the service.

D. In the Sudan where some hundred different tribes are found, extension workers are needed on tribal bases to perform multipurpose community development tasks. Noah[4] has quoted Gray who describes such persons:

"To be successful in his work, the village worker must have a good understanding and a high degree of skill in a 'social technology' which we commonly call extension but which might be described as a mixture of informal adult education, rural sociology, human psychology, and cultural anthropology. In this particulat field, the miltipurpose extension worker must be a specialist."

The above cannot be expected from village level workers who have had only eight years of schooling and the development of such competencies in these workers offers a chalienge to the process of training. The extension service is on the look for a village level worker who combines the qualities of a leader, organizer, and above all must have a sense of mission if he is to survive as an extension worker with conservative, suspicious and uncooperative nomads or tribal shifting cultivators.[5]

3. Problems of Training Identified

Training programs of workers at the village or local level should aim at establishing the following:

1. To give a content of knowledge which the trainee is expected to transmit to the communities in which he works.
2. To teach methods of transmitting this knowledge, encouraging local initiative and organizing community groups for study and action.
3. To raise the workers' morale and instill in him a sense of mission for community work.[6]

A. However, the development of such competencies will depend on the availability of training staff which at the present time is lacking. Training conducted at the present time is undertaken by national and provincial level workers as a part time activity. What is needed is a teaching staff who are full time and in this manner are able to keep up with the latest developments in teaching subject matter and methods.

B. Trainees recruited from over one hundred tribes of the Sudan bring different values and frames of reference to the training experience. To the extent that communication between these trainees is lacking, it is also lacking between the individual trainee and other regions or tribes to which he does not belong. How to establish communication between the individuals on one hand and between the individuals and the different "cultures" on the other represents a great challenge to those who are involved in training this group.

C. The problem of identifying the training needs of extension workers has been the subject of great investigation in different countries and the Sudan is no exception. This is one of the questions which has to be resolved so that proper use could be made of the training sessions held.

D. Selection of the appropriate training methods represents another problem as it affects the proper utilization of resources available, especially in developing countries where a waste of efforts and material may be the determinant of success or failure of a particular undertaking. Dewan is quoted in this respect:

"Looking to the nature of a Sudanese and his general approach to things, lecture methods will always prove to be ineffective with him in training. Discussion methods must be utilized in the form of seminars. The job of trainer should be to help the trainees identify the problem, diagnose as to what makes the problem what it is and then by pooling ideas and experience to find appropriate approaches to solving it."

E. Availability of funds and positive attitude at the administrative level are emphasized by Duncan[7], and this is quoted here as one of the problems because such factors are lacking in the Sudan. Without these no training is ever possible.

F. Training is a continuous process which has to take into consideration the changing needs of the extension workers. In the first place the administrators have to realize this and provide for it.

4. Implications and Recommendations

The job of a village-level worker is an important one. A careful and calculated selection and recruitment will determine to a great extent the proper functioning of the service. Training of these workers is a prerequisite to a successful service.

"Systematic organization and coordination is the key note to successful long time extension training programs. An efficient and successful extension training program must consider the total training needs of personnel in all phases of the extension service program. Furthermore it must be unified under one single training program with its various phases integrated to include:

a. student guidance and undergraduate course work
b. selection and placement of new workers
c. orientation and training of new workers
d. in-service training conferences and short courses within the state
e. regional summer schools, and
f. guidance work or other professional improvement as deemed necessary."[8]

Some phases of the above process are not identified with Sudan. However, a more or less similar frame of reference will be highly desirable and applicable in the near future, especially after the establishment of the Department of Extension Education of the College of Agriculture, University of Khartoum.

Any training program has to undertake the clarification of such characteristics of the extension service as is outlined below:

A. The philosophy and objectives of the organization.
B. The organizational setup and the administrative hierarchy.
C. Financial aspects and the resources available for program development.

Specific recommendations pertaining to the problems of recruitment and training outlined above are given below:

A. To attract "good" workers to serve in extension service, the job should be made appealing to these by offering better salaries and providing for a clearly defined term of service which allows advancement and promotion of the individual.

B. On initiation, a sense of responsibility and mission should be instilled in these workers. They should be briefed on the adverse conditions under which they are expected to serve. Guidance and encouragement continuously provided by the provincial and national level workers will have positive effect on the morale of these workers.

C. A full time teaching body is highly desirable together with the appropriate financial resources resulting from a favorable attitude of administrators towards the importance of training.

D. Selection of the appropriate training methods such as seminars and open discussion will facilitate the process of learning in any training program.

E. Careful consideration should be given to the identification of training needs of on-the-job extension workers so that in-service training could be provided to meet these needs. Hashim[9] has quoted "The National Task Force on Cooperative Extension Inservice Training" in outlining guidelines for determining training needs:

1. Job analysis - or activities of the worker.
2. Analysis of current social and economic changes and resulting program emphasis - i.e., the environment in which he is working.
3. Self survey by the individual worker - i.e., self appraisal of the workers training needs.
4. Direct approach through supervisors' or specialists' day-to-day observation - i.e., consciousness of supervisors and specialists of the workers training needs through direct observation.
5. Psychological tests: tests measuring aptitudes and abilities, interests and personality of the worker.
6. Performance evaluation: determine the quality and quantity of output of the worker measured against stated objectives.

The above guidelines are appropriate in determining the training need of on-the-job workers.

Summary and Conclusions

1. Recruitment and training of village-level workers are of major importance in determining the success of the extension service in the Sudan which is conducting educational programs to stimulate desirable

social and economic changes. Special attention should be given to training in the social sciences and methods of communication so that these workers could effectively reach and communicate with the different clientele they are expected to serve.

2. Training is a continuous process and hence extension workers should receive refresher courses to keep abreast of the latest scientific and technical developments.

3. Funds and a full time training body should be made available together with a positive administrative attitude towards the desirability of training as a prerequisite to a successful service.

4. The extension service career should be defined and rewarding to attract "good" workers to the service.

Footnotes

1. Duncan, James A., "Training Cooperative Extension Workers - The Coordinated Approach." A publication of Wisconsin Ag. & Ext. Service, Univ. of Wisc., 1957, p. 3.

2. Quoted by Duncan, op. cit.

3. Dewan, A. P., "Report on Community Development in the Sudan," Unpublished material, Khartoum, 1965.

4. Noah, Salah E., Ph.D. Thesis, Univ. of Wisc., 1964, p. 216.

5. Noah, op. cit., p. 222.

6. T. R. Batten, Communities and Their Development. London Oxford University Press, 1960, p. 191.

7. Duncan, op. cit., p. 3.

8. Duncan, op. cit.

9. Hashim, El-Sayed, M.Sc. Seminar Report, Univ. of Wisc., 1967, p. 13.

Bibliography

Batten, T. R., Communities and Their Development. London Oxford Univ. Press, 1960.

Dewan, A. P., "Report on Community Development in the Sudan," Unpublished Material, Khartoum, 1965.

Duncan, James A. "Training Cooperative Extension Workers - The Coordinated Approach," A publication of Wisconsin Cooperative Extension Service, University of Wisconsin, 1959, p. 3.

Hashim, El-Sayed, M.S. Seminar Report, Univ. of Wisc., 1967, p. 13.

Noah, Salah E., Ph.D. Thesis, Univ. of Wisc., 1964.

WHY AGENCY COORDINATION IN RURAL DEVELOPMENT?

Glenn W. Scherkenbach

Agricultural development is as dependent on how effectively people work together as it is on the natural resources on which it is based. Many factors influence agricultural development and for this reason we must be aware of what each accomplishes and how each of the factors depends for its effect on each of the others. All of these factors are essential, and for this reason we should recognize them as being of equal importance in any program for agricultural development. Most important of all, we must remember that these factors are implemented by people.

These factors are represented in one form or another by specific organizations within a country. And because such organizations are operationalized by people, it should be realized that these people must be aware of their role in a play which cannot be performed by any one actor. If they hope to give a complete performance, they will have to be willing to work cooperatively with one another. As the medical doctor is often dependent upon the services of the pharmacist for the success of his treatment to a patient, so it is with the agronomist, who must depend on the credit and supply services' cooperation for the application of his newly introduced production techniques.

Non-cooperation among the various agencies interested in the development of the rural populations of the world can only result in material waste, duplication of efforts, conflicts of policy and inopportune timing. As a result of these emerging problems, such agencies become overly competitive and loose sight of their original and important objectives. This mis-direction of effort leads to unhealthy relationships between the agencies and the farm populations they are trying to assist. Poor public relations arising between the various agencies and their clients can only lead to a decreasing amount of participation by the farm population in the development programs offered to them. We can now realize that this lack of cooperation which is found among agencies is often the causative agent for the lack of cooperation found between the agencies and the farm people they serve. Many times you see farm people wait for several hours to speak with one agency official only to find out that the problem they wish to discuss with him is not his responsibility, and they will have to discuss the matter of concern with another agent - whose office hours are the next day.

The coordination of various agencies' activities should be a primary objective of any complete agricultural development program, but such an objective need not be a difficult one to achieve. Such an objective must be worked for at the very beginning of any such program for development, and be continuously referred to when any activities are under discussion. Planners, administrators, supervisors and local agents must be familiar with the overall, and often times long-range, objectives of their country's

rural development program. They will have to realize their role, and be willing to recognize and cooperate with the many supporting roles represented by the other agencies. In order for these people to achieve this objective of coordination, they will have to keep certain general principles in mind. These basic principles are:

Know What the Entire Process of Rural Development Involves: Only if you understand the entire process can you hope to appreciate and be willing to work with the other agencies.

Try to Participate in Professional Associations: With this professional contact all parties are able to discuss their problems and accomplishments, so that all who are interested in Rural Development can benefit by each other's experiences. Such associations often lead to published material, which can be of use to many people outside of the country in which the work is being carried on; thus broadening the world's knowledge on the subject.

Jointly Plan Your Programs of Work: Get together with other agents from other agencies, and attempt to define common problematic areas, various solutions and similar objectives. After these items are stated, make an attempt to coordinate the timing of your activities, the topics of such activities, and the meetings for such activities.

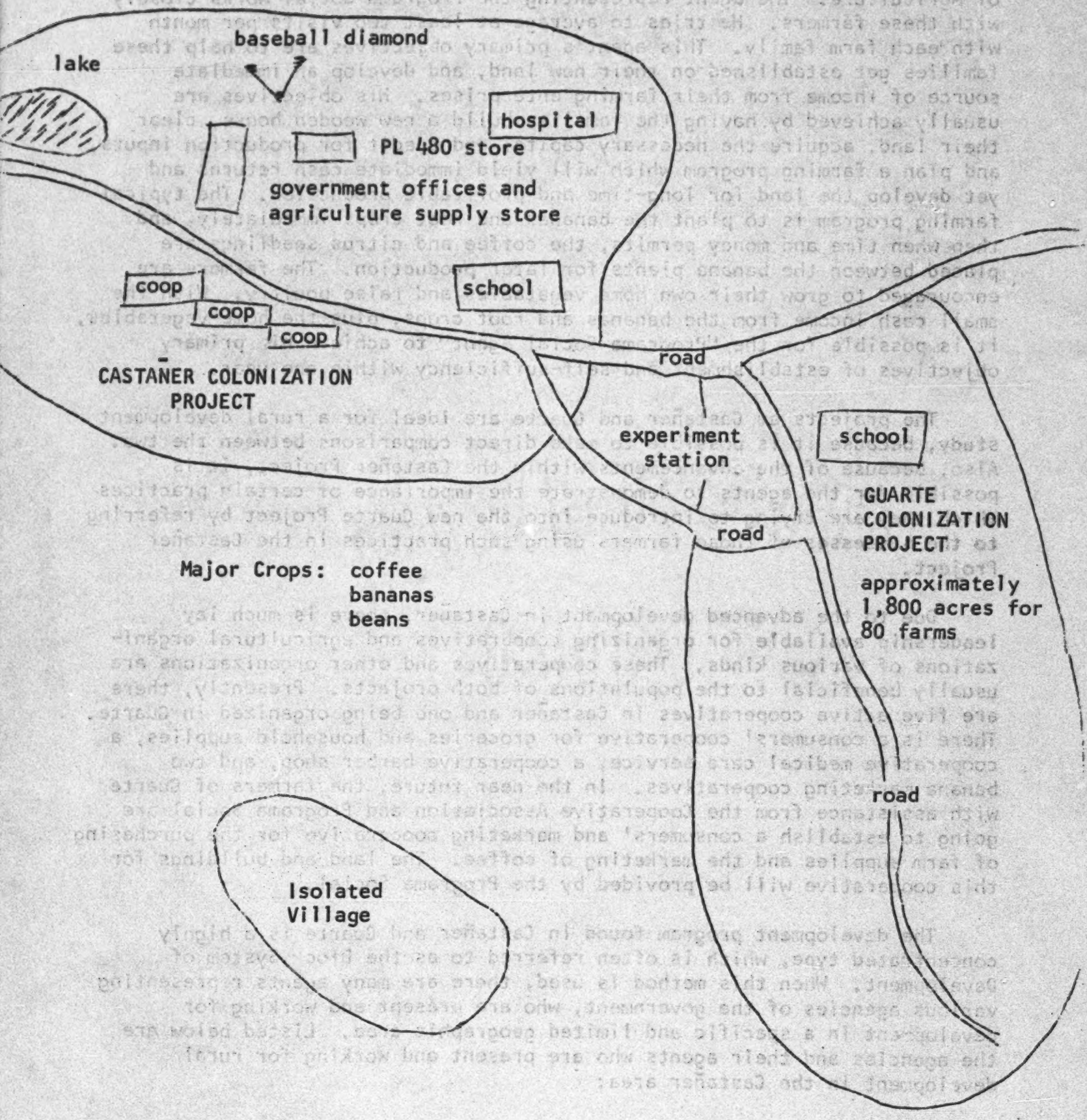
Arrange for Physical Attachments and Associations: By having this physical contact, one is constantly reminded and persuaded to work cooperatively with other agents. With such things as sharing offices, vehicles and staffs, it is easy to get to know the various responsibilities and activities of the other agents and to coordinate your office hours and farm visits with theirs.

Try to Have Social Contact with Fellow Workers: These informal meetings help you to get to know your fellow workers completely. It helps develop wholesome relationships which are carried into the office. Such relationships allow for frank and honest discussions on the job. Also, much of the need for competition can be fulfilled in this sort of activity.

Try to Have Common Training Sessions: Workshops on communications technique, teaching methods and the social sciences could be given to agents from different agencies at common sessions.

The map on the following page is of two colonization projects being conducted in Puerto Rico by the Department of Agriculture. The original project involved the purchase and distribution of the Castañer Hacienda. The Castañer Hacienda, which was purchased by the government about 25 years ago, was divided into small parcels of 20-25 acres and distributed to landless farmers. Those original small farms, which were started and developed on relatively run-down land some 20 years ago, are now very productive and provide a relatively high standard of living for their operating families. The principle crops from these farms are coffee, bananas and beans. These principle crops are produced by the market.

Rural Community Development in Puerto Rico



Later, the government purchased the Guarte Hacienda, and three years ago it was divided into eighty, 20-25 acre, farms. The farms were then distributed to landless farmers by the "Programa Social" of the Department of Agriculture. The agent representing the Programa Social works closely with these farmers. He tries to average at least two visits per month with each farm family. This agent's primary objectives are to help these families get established on their new land, and develop an immediate source of income from their farming enterprises. His objectives are usually achieved by having the families build a new wooden house, clear their land, acquire the necessary capital and credit for production inputs, and plan a farming program which will yield immediate cash returns and yet develop the land for long-time and profitable production. The typical farming program is to plant the bananas and root crops immediately, and then when time and money permits, the coffee and citrus seedlings are placed between the banana plants for later production. The farmers are encouraged to grow their own home vegetables and raise poultry. With the small cash income from the bananas and root crops, plus the home vegetables, it is possible for the "Programa Social Agent" to achieve his primary objectives of establishment and self-sufficiency within one year.

The projects at Castañer and Guarte are ideal for a rural development study, because it is possible to make direct comparisons between the two. Also, because of the advancements within the Castañer Project, it is possible for the agents to demonstrate the importance of certain practices which they are trying to introduce into the new Guarte Project by referring to the successes of those farmers using such practices in the Castañer Project.

Due to the advanced development in Castañer, there is much lay leadership available for organizing cooperatives and agricultural organizations of various kinds. These cooperatives and other organizations are usually beneficial to the populations of both projects. Presently, there are five active cooperatives in Castañer and one being organized in Guarte. There is a consumers' cooperative for groceries and household supplies, a cooperative medical care service, a cooperative barber shop, and two banana marketing cooperatives. In the near future, the farmers of Guarte with assistance from the Cooperative Association and Programa Social are going to establish a consumers' and marketing cooperative for the purchasing of farm supplies and the marketing of coffee. The land and buildings for this cooperative will be provided by the Programa Social.

The development program found in Castañer and Guarte is a highly concentrated type, which is often referred to as the Block System of Development. When this method is used, there are many agents representing various agencies of the government, who are present and working for development in a specific and limited geographic area. Listed below are the agencies and their agents who are present and working for rural development in the Castañer area:

1. <u>Programa Social</u> - Two agents are present, but each is responsible for his own farms; they do not work with the same farm families. These agents are responsible for the following activities:

A. Production credit supervision
B. Agricultural advisory work
C. Land and materials distribution
D. Administration of the colonization program

II. Cooperative Extension Service - Three agents are present. There is a county agent, a home management agent, and a 4-H club agent. These agents are only responsible for those families in the area who are not a part of the Guarte Project. (The first five years for any family in a colonization project are the responsibility of the "Programa Social Agent.")

III. The USDA and University of Puerto Rico Experiment Station - This station provides new production information and is the local nursery for coffee seedlings.

IV. USDA Agricultural Supply Store - Until the farmers are able to form a cooperative association to provide for their seed, feed, fertilizer and machinery needs, the government will operate a store for the purpose.

V. PL 480 Distribution Center - Surplus food from the United States is given out to needy families at these centers. This can be a source of food for newly established families.

VI. Isolated Villages Program - There is one agent present who represents this community development effort. He functions as a community development agent. He is responsible for introducing the many government development programs to those people who are not readily reached by normal means of communication. His families can only be reached by foot or horseback.

VII. The Cooperative Association - The purpose of this agency is to encourage and assist the farmers in the development of cooperatives.

VIII. The Hospital - A traveling staff is provided by the hospital for the purpose of maintaining a mobile vaccination center. This staff is also responsible for some health education programs.

With so many agents working in such a limited area, it is easy for us to understand why they must work cooperatively with one another. We can see the need for each to understand the duties and responsibilities of the others. In order for the isolated villages agent to encourage his families to participate in the medical health program, he must know what such a program involves and when it is going to be offered to his families. Besides this, he must have some understanding and appreciation of the cooperative movement and how it can benefit his families if they belong to, let us say, the medical care service. When we look at the "Programa Social Agents" and the Cooperative Extension Service agents, the need for cooperation becomes apparent. If the Cooperative Extension Service agent wishes to

continue the efforts of the Programa Social Agent, he must have an understanding of the type of farming program that agent was trying to establish and what has been his achievements and problems.

Castañer and Guarte are fine examples of the type of coordination of effort we have been discussing throughout this paper. All of the agencies have coordinated their office and store hours, so that all are available to the farmers on the same days. The offices of the "Programa Social" and the Cooperative Extension Service are located in the same building. The hospital and its staff are only two blocks from this building. Besides these physical and professional contacts we have spoken about, many of the agents play on the community baseball team and belong to the local consumers' cooperative. Usually, as a result of such associations, we can see agents make an extra effort to assist another agent. It is common to see the "Programa Social Agent" give a "life" to the isolated villages agent on his way to Guarte, and it is on these short trips that they get a chance to discuss new ideas about helping rural people develop.

Footnotes

1. In A. T. Mosher's book, Getting Agriculture Moving, these factors of development are listed:
   - A. Markets for Farm Products
   - B. Constantly Changing Technology
   - C. Local Availability of Supplies
   - D. Production Incentives for Farmers
   - E. Transportation
   - F. Education for Development
   - G. Production Credit
   - H. Group Action by Farmers
   - I. Expanding Ag. Lands
   - J. National Planning for Agricultural Development

ERIC Clearinghouse
MAR 20 1968
on Adult Education